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# RADIATION SURVEY AND SOIL MANAGEMENT REPORT

for
OGM Investors, LLC
c/o Golub & Company
Lindsay Light II Site/OU3/North McClurg Court
345 East Ohio
Chicago, Illinois

## **Presented To:**

United States Environmental Protection Agency & City of Chicago - Department of the Environment Chicago, Illinois

**Submitted By:** 

GaiaTech Incorporated Chicago, Illinois

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#### 1.0 INTRODUCTION

GaiaTech Incorporated (GaiaTech) was retained to conduct a soil radiation survey and perform remediation activities at the Golub/OGM Investors, LLC development site located at 345 East Ohio Street (the Site) in Chicago, Illinois (Figure 1). The scope of work was conducted to determine if any residual radioactive impacted soils existed in a wedge of soil around the perimeter of the Phase I section of the site as well as in adjacent City of Chicago right-of-way (ROW) containing sidewalk areas and Ohio Street and Grand Avenue where utilities were proposed. The scope of work was conducted, in accordance with the Soil Management Plan previously presented to and approved by the United States Environmental Protection Agency (US EPA), which was developed by GaiaTech to ensure safe working conditions during site construction activities.

The Soil Management Work Plan was prepared to document protocol, techniques and methodologies to be used to field-screen and manage soils surrounding the perimeter of the Phase I portion of the subject property prior to site construction activities. The goal of the screening activities was to document all suspect areas prior to site development to ensure it will be safe for trade people to work in the areas without environmental oversight during construction activities in the areas.

### 1.1 Site Background

The Site is currently vacant and consists of approximately 2.16 acre acres, and is currently owned by OGM Investors, LLC. During the 2000 due diligence review, GaiaTech detected elevated levels of gamma radiation on the subject site. Based on the initial findings, on May 31, 2000, TRS (the prior owner) informed the USEPA of the elevated levels of radiation at the property. USEPA designated the subject property as the Lindsay Light II Site/(OU3/North McClurg Court). On July 13, 2000, USEPA notified TRS and Kerr McGee Chemical L.L.C. (entity responsible for disposal of radioactive material at the property ), that the radioactive material at the property was off-site contamination related to the Lindsay Light Unilateral Administrative Order (UAO) and subject to the UAO as amended.

On May 15, 2002, the USEPA approved TRS's Removal Work Plan for the radioactive soils at the property. From June 6, 2002 through October 2, 2002, TRS implemented the approved work plan to remove both thorium and pesticide-contaminated soils. Approximately 6,233 tons of radioactive soils were excavated, shipped and disposed of at the Envirocare Facility in Clive, Utah. Post cleanup confirmatory samples met the soil clean-up criteria of 7.1 picoCuries per gram (pCi/g) total radium (Ra-226 + Ra-228), which was confirmed by the USEPA. In Addition, approximately 5,689 tons of pesticide-impacted soils were removed, transported and disposed of at the CID Landfill in Chicago, Illinois. The pesticide contamination was cleaned up to meet the Illinois Tier I soil remediation objectives for a residential property. On December 31, 2002, TRS through

their contractor, STS Consultants, LTD., prepared a Completion Report – Time-Critical Removal Action for the property and submitted it to the USEPA.

On March 21, 2003, USEPA issued a letter of Completion of Work for Lindsay Light II Site/(OU3/North McClurg Court), 341 East Ohio Street (currently re-named 345 East Ohio Street), Chicago, Illinois. In their letter, the USEPA concurred that TRS had removed all radioactive-contaminated material within the footprint of the subject property. However, three radioactive-contaminated areas were identified below the immediately adjacent Grand Avenue and Ohio Street sidewalks located within the City of Chicago ROW. Proper measures and radiation surveillance as required by the City of Chicago permit "moratorium" were required if these areas were to be disturbed.

Since the entire property has completed an approved remediation for radioactive and pesticide-contaminated soils and all identified radioactive and pesticide-impacted soils were removed from the Site, no land use or construction worker environmental restrictions were to be applied to the property during site development.

Although the Site had completed an approved remediation, three areas immediately adjacent to the Site were identified as containing potentially radiologically impacted soils (Figure 2). The areas are located within the City of Chicago owned ROW along the Grand Avenue and Ohio Street sidewalks. Additionally, to avoid undermining the adjacent property to the west and the ROW to the north, east and south of the site, a wedge of soil (with a slope of 1 vertical to 1.5 horizontal) was left undisturbed during the site remediation performed by TRS around the perimeter of the site (radiological area of concern - RAC). The inner limit of the wedge has been identified on Figure 2. Previous subsurface sampling within these soils indicated that they do not contain radiological impacted soils. However, to ensure that the soils are safe for construction at the site and within adjacent ROWs and street areas, all soils within the wedge and the city ROW were to be screened in 18-inch lifts at all areas not previously directly screened.

### 1.2 Geologic Information

During the current (2004-2005) and former (2002) investigations and remedial activities at the site, surficial soils generally consisted of 6 to 9 feet of urban fill materials. The fill material was composed of sand, organic soils, clay, wood, ash, cinders, slag, glass, concrete and bricks. Underlying the fill was a brown medium sand with occasional shell pieces and/or gravel to a depth of approximatly 30 feet below existing grade. The sand unit is underlain by a gray silty clay unit to a depth of 120 feet bgs according to geotechnical borings review by GaiaTech. The clay unit can contain occasional gravel, cobbles and boulders of various sizes. Dolomite bedrock underlies the silty clay unit at a depth of between 118 and 120 feet bgs per geotechnical boring logs. Groundwater is encountered at a depth of around 12 feet below existing grade.

#### 2.0 WORK PLAN AND HEATH AND SAFTEY PLAN

#### 2.1 Work Plan

The Revised Soil Management Workplan (Appendix A) was prepared to document protocol, techniques and methodologies to be used to field-screen and manage soils surrounding the perimeter of the Phase I (western 1/2) area of the property prior to the site development activities. A Soil Management Workplan was initially submitted to the US Environmental Protection Agency (USEPA) for review on November 10, 2004. This Revised Soil Management Workplan incorporated all comments made by the USEPA in correspondence dated November 30, 2004 and included in Appendix A.

The workplan was not considered a Remedial Action Plan and as such only incorporates confirmatory sampling as it applies to worker safety and soil management considerations. The goal was to implement this Workplan before the site development to ensure that the site would be safe for trade people to work in the areas without environmental oversight during the development activities in the areas.

Since the entire property has completed an approved remediation for radioactive and pesticide-contaminated soils and all identified radioactive and pesticide-impacted soils were removed from the Site, no land use or construction worker environmental restrictions were to be applied to the property during site development.

Although the Site had completed an approved remediation, three areas immediately adjacent to the Site were identified as containing potentially radiologically impacted soils (Figure 2). The areas are located within the City of Chicago owned ROW along the Grand Avenue and Ohio Street sidewalks. Additionally, to avoid undermining the adjacent property to the west and the ROW to the north, east and south of the site, a wedge of soil (with a slope of 1 vertical to 1.5 horizontal) was left undisturbed during the site remediation performed by TRS around the perimeter of the site (radiological area of concern - RAC). The inner limit of the wedge has been identified on Figure 2. Extensive boring and sampling within these soils previously indicated that they do not contain radiological impacted soils. However, because the soils have not been fully screened in 18-inch lifts, the area between the inner boundary and the site perimeter was designated as a RAC needing further screening.

The Workplan discussed all issues related to performing subsurface excavation for sheet piling installation, caisson drilling, utility installation, sidewalk removal, and landscaping installation within the ROW and the RAC. The original plan was to selectively screen the RAC and ROW area were planned construction activities were to occur. However, after areas were found above the cleanup threshold in the RAC area, followed by discussions with the USEPA, it was determined that the entire RAC, ROW and Street areas would need to be fully surveyed (Figure 3 and Appendix B). The procedures outlined in this plan were implemented to check the above areas prior to any subsurface work conducted

anywhere within the ROW and RAC. As required by the USEPA and the City of Chicago, a special permit from Chicago Department of Environment to conduct subsurface work within the ROW is required (Appendix C). Due to the suspected impacts in the ROW, additional measures including radiation surveillance were being incorporated into the workplan for the ROW area. As a result, any radiation-impacted soils exceeding the thresholds in any of the above areas was properly managed by and disposed of off-site by Kerr-McGee.

Each area in the ROW where trade people may be subject to any radiation levels was excavated and thoroughly screened prior to any construction activities. Any levels above the established safe criteria of 7.1 pCi/g was removed and transported offsite for disposal. Prior to excavation of any impacted soils, the area was cordoned off from unauthorized personnel and personnel wearing modified Level D personal protective equipment (PPE) conducted the remedial activities.

## 2.2 Health and Safety Plan

The attached (Appendix C) Health and Safety Plan (HASP) was utilized and modified as necessary to conform with evolving site activities and remedial activities in order to minimize and prevent exposures to hazardous substances and conditions related to all excavation and remediation activities within the RAC and the ROW. No development plan is contemplated for Phase II area (eastern 1/2) of the property at this time and the area was used for soil staging during the related soil excavation and remediation. Thus, the Site HASP was designed for the areas including the RAC, ROW and soil staging area within the Phase II area during the implementation of the Soil Management Plan. All personnel assigned to this project were required to review thoroughly the contents of the HASP and to strictly adhere to the policies and procedures listed herein. The HASP was used by GaiaTech and our designated contractors and consultants, and approved Site visitors. The USEPA, and other agencies, were not considered subject to this plan and were required to conform to their own Health and Safety Plans.

The HASP meets the requirements of OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and applicable subparts of OSHA 29 CFR 1926,1910 and 10 CFR. Visitors were be required to review the health and safety plan and read and sign the visitor information sheet.

Analytical results from the non-radioactive urban fill materials excavated from the utility trenches indicated that the soils exceeded the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Cleanup Objectives (TACO) Tier I construction worker ingestion (400 mg/kg) exposure pathway for lead (700 mg/kg - Table 1 and Appendix E). All excavated soils were therefore managed to minimize any dust or exposure to the soils during excavation and loading activites prior to disposal.

#### SOIL SCREENING AND REMEDAIL ACTIVITIES 3.0

Prior to field activities, GaiaTech completed a subsurface utility clearance through the Digger service provided by the City of Chicago. Also prior to any surveying activities, a 10 cubic yard enclosed dumpster was placed on the site by Kerr-McGee in case any impacted soils were encountered. Any impacted soils would be placed in the special dumpster for disposal. During screening activities at the site two instruments were used for the screening of the soils in the RAC, ROW and street utility trenches and are listed below:

- Ludlum 2221 Rate Meter-Scaler with Ludlum 44-10 2 inch x 2 inch Nal probe (unsheilded)
- Ludlum Model 3 Survey Meters with attached Pancake Probe (Pancake)

General gamma radiation surveillance was performed using the Ludlum meters and probes listed above with calibration conducted prior to field work using calibration blocks at Kerr-McGee's Rare Earths Facility in West Chicago, Illinois. The instruments were calibrated to an equivalent number of counts per minute corresponding to the 7.1 pCi/g total radium (USEPA clean-up level).

Screening by a field technician utilizing a Ludlum 2221 meter was completed in 18-inch lifts or less. As needed, the field technician also surveyed the sidewalls of the excavation to ensure remaining soils were below the radiation survey threshold. Unless utilities were present, surveying continued to a depth (between 6 and 9 feet bgs) where native soils were encountered. At locations where utilities were present, surveying was accomplished insitu by utilizing the Ludlum probe with a long cord and/or screening was completed on each excavated bucket. The following presents a narrative of the survey work conducted at the site. Additionally, specific details of the daily screening results can be viewed on attached STS field sheets located in Appendix F. The location and detail of all screening areas in the ROWs and Streets are presented on Figure 4. This figure also indicates the relative size and location of the identified impact areas. Activities are generally listed by survey area and by date of completion. Photo documentation of site activites is included in Appendix G.

#### 3.1 Site Perimeter/RAC

The work in this area was completed between December 13 and December 22, 2004. As stated earlier, the complete remaining wedge/RAC (western 1/2 - Phase I) on the site was surveyed by excavating fill materials and screening the soil in 18 inch benches utilizing the Ludlum 2221 meter and probe. All screened soils in the RAC were returned to the excavation except those found to exceed the established USEPA clean soil limit of 7.1 PiC/g. Impacted soils were removed by hand digging and/or excavation and placed in a "supersack". The supersack was sealed and moved to a lined and covered dumpster for eventual disposal.

On December 15, 2004 work began in this area by excavating and screening areas of the north and south RAC. During screening along the south side of the RAC near the ROW of Grand Street, a small area was found that exceeded the limit on the Ludlum 2221 meter. The USEPA was contacted (Mr. Larry Jensen and Ms. Verneta Simon) and informed that the area appeared to be very small. USEPA representatives were onsite the following day to observe the impact area.

On December 16, 2004, work continued on screening the RAC. USEPA personnel visited the site to inspect the impact area and agreed that it appeared to be a small area. This area (Area 1) was found near the south property line at a depth of between 2.5 and 3.5 feet bgs. Larry Jenson of the USEPA collected a sample (Table 1) of the impacted soil for analysis wearing appropriate PPE. The sample was collected as documented in Section 4 of this report. Since the area appeared to be small the USEPA (Larry Jenson and Vernita Simon) agreed that we could attempt to remove the impacted soil and no confirmatory sample was necessary. The radiation technician from STS with modified Level D PPE dug out all of the impact soil and placed it in a supersack. The area was checked with a unshielded and shielded Ludlum 2221 meter to ensure cleanup was complete. Approximatly 0.15 yd³s of impacted soil was removed from this excavation. After all excavation activities, the STS technician decontaminated his equipment and checked his PPE with pancake meter. All PPE was placed in the supersack with the impacted soil and placed in the dumpster for disposal.

On December 17, 2004, continued surveying the RAC on the site, with no significant readings except for another small area found in the south RAC, east of the previous impact area. Based on preliminary screening around the impact, the area also appeared to be very small. Following this discovery, the area was covered with plastic temporarily, while surveying was conducted in the north RAC, near an area of potential impact. After a small amount of excavation, at a depth of 1.5 feet bgs, high readings on the Ludlum 2221 meter were found and the area appeared to be much larger than the previous two small areas found along the south property boundary. The USEPA was contacted again and Larry Jensen came out and observed the collection of a sample in both of the areas. For the balance of the day surveying continued along the western RAC (proposed sewer trench) located adjacent to the Time-Life building.

In addition, Larry Bertsch and John Yang of GaiaTech along with Eric Hinds of Golub attended a meeting with the USEPA. During the meeting the USEPA communicated that they would like to see all of the RAC and ROW surveyed instead of selected locations to ensure that construction personnel would not be exposed to potential radioactive soils. This request was due to impacted areas that were found in assumed "clean" areas of the RAC. Since a small amount of radioactive soils was found in the RAC, the USEPA requested that the undeveloped portion (eastern 1/2 - Phase II) of the site should be marked or covered to ensure it would not be disturbed prior to additional radiological surveying. GaiaTech agreed to cover any un-surveyed areas in the undeveloped portion of the property with Geotextile material. Additionally GaiaTech and Golub agreed to survey all

fill materials along the RAC and ROW of the proposed developed portion of the property. The letter that was generated by USEPA after this meeting is included under Appendix B.

On December 19, 2004, most of the surveying along the wedge/RAC area along the western property line was finished and a few areas were also done along the north and south RAC.

On December 20, 2004, GaiaTech finished screening along the proposed sheeting area and proceeded to work on excavating previously encountered impact areas along the north and south boundaries. Excavation of the south impact area (Area 2) removed about 0.3 yd<sup>3</sup>s of soil before the Ludlum survey meter indicated that residual readings were below the limit set for impacted soils. Due to the small size of the impact area, the USEPA did not require a confirmatory soil sample. Excavation of the north area (Area 3) found an area from 1.5 to 5 feet in depth and 5 feet long and 3 feet wide. Approximatly 2.5 cubic yards of soil was removed from this area. During the excavation process two workers loaded the soil with the assistance of a mini-excavator. All workers wore modified Level D PPE and a certified health physicist observed and monitored the workers. Air monitoring results are included in Appendix H. All equipment was wiped clean and checked with a pancake detector. All cleaning material, Tyvecks, booties and gloves were placed in a supersack with impacted soil and placed in the dumpster for eventual disposal.

After determination of the extent and the removal of the impacted soil, Larry Jensen of the EPA, arrived at the site and collected a verification sample in the larger northern impact area (Area 3). The sample was transported by the radiation technician to RSSI for analysis.

No work was conducted on December 21, until the results of verification soil sampling was obtained. By the end of December 21, the results were obtained and indicated that residual soils in the impact area were below the USEPA clean level. Following confirmation of the sampling results (Table 2), the area was released by the USEPA with a written sign off form (Appendix H). The following day (December 22), the contractor continued to dig below former impact Area 3 to determine if any other impacted soil existed below the previously identified impact. Soil screening to the top of native soils (9 feet bgs) did not indicate any further impacted soil in this area.

In summary, three impact areas (Areas 1, 2 and 3) were found in the RAC, with two areas (Area 1 & 2) found along the south property line and one (Area 3) detected along the northern property line. In total only a small amount of residual impact was detected, which did not exceed a total of approximately 3 yd<sup>3</sup>s of impacted soil. All of the RAC within the Phase I/western section of the property had now been completely surveyed with no further surveying necessary.

#### 3.2 Ohio Street Sidewalk/ROW

Work in this area occurred between January 5 and 12, 2005. On January 5, 2005 work commenced on the Ohio Street sidewalk/ROW area. Initial work consisted of the removal of concrete planter boxes, metal guardrails, posts, trees and concrete sidewalk. Screening was completed on the surficial soils and other debris with no apparent impact detected. Concrete and other debris was stockpiled until it could be hauled offsite.

Between January 6th and 7th no screening occurred, due to the lack of a Chicago Department of Transpiration (CDOT) permit and utility clearance. On both days the excavation contractor concentrated on removing numerous loads of concrete and other debris and completion of the placement of a geotextile material around the perimeter of the undeveloped (eastern 1/2 - Phase II) half of the site as required by the USEPA.

On January 8th through 12th, 2005, the excavation contractor (TRI), STS, and GaiaTech, screened most of the ROW area of Ohio street to the top of native soils. Native soils were encountered between a depth of 7 and 9 feet bgs. No readings were found that exceeded the limit on the Ludlum 2221 screening instrument. Screening was accomplished by directly screening the excavation by entering the hole when it was shallow and as the excavation deepened by using a long cord on the instrument to check the sidewalks and floor of the excavation. No existing utilities were encountered in the entire ROW and all soils were fully excavated and checked for impact. Only two small areas were bypassed, which included two small areas adjacent to street light poles located adjacent to Ohio Street. At a minimum, soils were still screened to a depth of three feet bgs around the poles. The light pole to the west however, was scheduled to be removed at a later date, at which time the soils in this area could be fully screened.

#### 3.3 **Ohio Street Utility Trench's**

In this area, survey activities were conducted between January 12 and 28, 2005. Concrete saw cutting of all the street trenches and curbs was completed on January 12, 2005. An offsite USEPA meeting also occurred on this date, where GaiaTech explained to the agency what had been done so far in the RAC and what was proposed for the ROW and street trenches. GaiaTech stated to the agency that all soils in these areas would be screened to the top of native soils, or screening would be completed in the excavation around various utilities. Pavement consisted of 4 to 6 inches of asphalt and 12 to 14 inches of concrete. Due to a weather delay, no work was conducted on January 13th.

Prior to any activities in this area partial street closure was completed utilizing the appropriate signs and barricades. All barricades and traffic control equipment were setup and taken down between 9:30 a.m. and 4 p.m. as stipulated in the Chicago Department of Transportation (CDOT) permit. Starting on January 14th and continuing though January 27, 2005, GaiaTech screened seven utility trenches that included three sewer, two water, one telephone and a gas trench. According to the site general contractor, the two proposed

Com Ed lines were to be screened independently by Com Ed contractors and were not part of this scope of work. Screening and trenching procedures consisted of excavating to the top of and between various utilities and screening with the Ludlum meter every 18-inches. A mini excavator was utilized to enable a more careful excavation around various utilities and to provide a smaller bucket for effective surveying of soils from each excavated soil bucket. Soils were also screened directly in the excavation until a depth of four feet, after which a long probe cord was used in the excavation and each excavated bucket was screened. Soils found to contain no elevated levels of radioactivity were loaded into a rubber tired loader and transported to a temporary soil stockpile. Upon completion of the screening process the excavation was backfilled with ca-6 stone and compacted. Initially trenches were only filled with stone and covered with a steel plate, but due to CDOT concerns with the weather, snow plowing and the stability of the backfill, they demanded that each trench be temporary patched with 10 inches of quickset concrete.

On January 19, 2005, the City of Chicago removed the western most light pole and excavated a location for a new pole. The radiation field technician also surveyed soils during this process. No elevated levels were found around the light pole. At a later date during trenching for a proposed sewer line on January 24th, the old light pole base was excavated screened and prepared for disposal. By January 27th all screening was completed for the trenches in Ohio Street. The last steel plates were removed from over the trenches and quick set concrete was poured in the last trench extensions on the morning of January 31.

On January 31, the CDOT inspector also required that additional patching (cold patch) be installed to make the road smoother for traffic. To comply with the CDOT request, on February 3, 2005 a paving contractor completed cold patching of the utility trenches in Ohio Street.

### 3.4 Grand Street Utility Trench

The proposed sewer trench was cut into the street on January 27th. Again to comply with the CDOT permit all work was conducted between 9:30 a.m. and 4 p.m. each day. Traffic control measures were setup and taken down during this period prior to any excavation and screening activities.

Screening of the Trench began on February 3, 2005 with the removal of the pavement in the trench. All excavated pavement was removed and stockpiled for later disposal. During the excavation process, several utilities were crossed and two sets of street car rails and granite paving bricks were removed from the excavation. Screening on the trench continued until Monday February 7, 2005. No elevated readings were observed anywhere within the trench or in the removed soils. Soil screening was accomplished by use of in hole screening with the Ludlum meter, long cord probe and with the screening of each removed soil bucket. The finished excavation was filled with ca-6 stone, compacted and

patched with 10 inches of quick set concrete. Iron plates were placed over the patched excavation until the concrete was suitable for traffic.

#### 3.5 Grand Street Sidewalk/ROW

Prior to screening in this area a temporary fence and concrete jersey barriers were installed to prepare for work in the ROW of Grand Street. This was completed to comply with City of Chicago CDOT Permits on maintaining a pedestrian way. On January 31st the initial screening of the Grand Street ROW began near the eastern driveway. At this location we found that only one utility was located in this area at a depth of 3.5 feet bgs. Excavation was conducted to the top of this utility and around it to a depth of 8 feet bgs, the depth of fill materials in this area.

Screening/surveying of the Grand Street ROW continued until February 4th, 2004 where an area (Area 4) in the western part of the ROW was found with soils exceeding the limit on the Ludlum meter (shielded and unshielded). A sample was collected in the area for confirmation of the impact area. No further excavation was conducted here and the area covered by plastic sheeting and caution tape on that date. Per previous USEPA instructions, the USEPA was notified by voice mail as to the location and levels of impact found in the area and our intention to remove impacted soil.

By February 8, 2005, a large proportion of the ROW area had been screened and GaiaTech prepared to organize the removal of the impacted soils found in Area 4. Two workers prepared to enter the impact area by donning the proper PPE and having personnel air monitoring devices placed on their Tyveck suits by a RSSI health physicist. The impact area workers continued to screen and carefully excavate the impacted soils to determine the extent of impact. All impacted soils were removed and placed in a supersack for transport to the onsite dumpster. During the removal process approximately 5 yd³s of impacted soil was removed. Following all impacted soil removal, the workers in the impact area decontaminated all of their equipment and checked the equipment and their PPE for any impact with the pancake detector. All decontamination materials and PPE were placed in supersacks with the impacted soils and moved to the onsite dumpster.

The USEPA was contacted to schedule a time for the USEPA to observe the collection of the verification sample. Eugene Jablonowski responded that he could be onsite to observe the sampling on February 9, 2005. In the mean time, screening continued in other areas of the ROW for the rest of the day. On February 9, 2005, Mr. Jablonowski directed the collection of the verification sample.

Until the verification results were received the contractor was directed to begin compaction and grading of the Grand Street ROW for replacement of the sidewalk. On February 10, the contractor graded, and compacted subbase material for the installation of the sidewalk scheduled for February 11, 2004. Near the end of the day on February 10th, the results received from RSSI and indicated that the sample was below the USEPA cleanup threshold

(7.1 PiC/g). Following concurrence with the USEPA, a release form was issued for this area (Area 4). After the receipt of this form, excavation and screening was completed on the soils directly under the former impact area to the top of the native soils at a depth of 8 feet bgs. No additional impact was observed in this area.

All soil screening was now complete and on February 11, 2005 a new sidewalk was installed in the Grand Street ROW. Four inches of concrete was installed with eight inches being installed in the proposed driveway. The jersey barriers and fencing was removed from the site on February 14, 2005.

#### 4.0 SOIL REMOVAL AND SAMPLING ACTIVITIES

Limited sampling was conducted to ascertain the concentration of suspected screened radiological soils and as confirmation of the completion of remedial activities in selected areas. A soil sample was also collected for disposal of non-radiologically impacted soils previously excavated from the proposed utility trenches in Ohio and Grand Streets.

## 4.1 Operation Procedure for Gamma Spectroscopic Analysis of Soil Samples

Utilizing USEPA protocols in their entirety, analysis of soil samples were completed by RSSI laboratories in Morton, Grove, Illinois. Analysis of the Uranium (U-238), Thorium (Th-232) and Actinium (U-235) decay series utilizing gamma spectroscopy was completed pursuant to the requirements of "Operating Procedure for Gamma Spectroscopic Analysis of Soil Samples". Some of the USEPA requirements are listed below:

- Gamma spectroscopy equipment was calibrated within the preceding 24 months with a multi-radionuclides gamma standard (with at least 10 radionuclide gamma energies) traceable to the Nation Institute of Standards and Technology. Dated calibration records were supplied to the USEPA personnel.
- Standard Sample Volume was 1000 cubic centimeters.
- Sample count times were sufficient to establish minimum detectable activity concentrations of at least 0.5 pCi/g for all radionuclides except those listed below for the actinium decay series.

Uranium (U-238) Decay Series

- Radium-226
- Lead-214
- Bismuth-214

Thorium (Th-232) Decay Series

- Actinium-228
- Thorium-228
- Lead212
- Bismuth-212
- Thallium-208

Additionally, sample counts were sufficient to establish minimum detectable activity concentrations of at least 5 pCi/g for potassium-40.

## 4.2 Radiological Sampling

Prior to sampling the identified impact area, each area was roped off to prevent non-authorized personnel from entering the area during sampling activities. All personnel that were required to complete activites in the designated impact area were required to have modified Level D PPE. This included booties, rubber gloves and Tyvek suites. During their exposure time in the impact area, personnel were monitored using radiation monitoring badges. Personnel air monitoring was only used during remedial activities and was completed and monitored by a RSSI Health Physicist. The results of the air monitoring is included as Appendix H.

After an area was identified as containing levels of radioactivity exceeding the limit set on the Ludlum 1222 unit (shielded and unshielded), the USEPA was notified by telephone that an area with apparent soil impact was encountered. Generally, the USEPA was present during the sampling to ensure that the highest level soils were collected for analysis. Soil sampling was accomplished by screening for the highest levels and then excavating the impacted soils with a stainless steel scoop. The soils were placed in a large stainless steel bowl, mixed and sifted to remove the larger aggregate and fill materials. Prior to placing the sifted soils in a laboratory jar, the impacted soils were checked with the Ludlum meter to ensure the highest levels were collected for analysis. The soils were then placed in laboratory supplied containers, transported under chain of custody procedures and analyzed at RSSI Laboratories in Morton Grove, Illinois. The results of the Sampling are summarized in Table 1 and the full results are included as Appendix E.

When sampling was complete, tools were wiped clean with towels and checked for residual radiological impact with a pancake meter. Personnel were also checked with the pancake meter to ensure they were decontaminated. All PPE and cleaning towels were disposed of with the impacted soil in a supersack and placed in the dumpster for disposal. The sampling results are summarized in Table 1 and 2 and the full results are included as Appendix E.

### 4.3 Waste Classification Sampling – Non-Radioactive Waste

In accordance with US EPA collection requirements, a composite sample was collected for required landfill parameters (VOCs, SVOCs, TAL, reactive sulfide, reactive cyanide, herbicides, pesticides and PCBs). The composite sample was collected from the soil stock pile, stored on the subject site prior to disposal. After collection the soil sample was placed in clean laboratory supplied containers. The samples were then secured in a sample cooler and preserved with ice. Under strict sample chain-of-custody procedures, the samples were delivered to First Environmental Laboratories in Naperville, Illinois. The results indicated that the urban fill materials were not hazardous and could be removed as special waste. The sampling results are summarized in Table 3 with the complete laboratory information included in Appendix C.

#### 5.0 SOIL DISPOSAL

All radiologically impacted soils were placed in supersacks and transferred to the onsite steel dumpster. After the completion of the soil radiation survey and remediation, the soil was transported and monitored by Hawks Logistics, Inc to a disposal facility in Clive, Utah. The disposal manifest is attached in Appendix J.

Non-radioactive soils that were generated during removal of soils from the proposed utility trenches in Ohio and Grand Streets were temporarily stockpiled on the site. Based on the results of the waste profiling, the waste was not hazardous and was designated as special waste. A total of 370 tons of the impacted soils were transported to Zion Landfill in Zion Illinois by licensed special waste haulers between January 20 to February 2, 2005. The soil waste manifests are included in Appendix K.

Additionally, 21 truck loads of concrete and asphalt were removed and sent to a recycling facility for crushing and reuse. The trucking tickets are attached in Appendix L.

#### 6.0 CONCLUSIONS

From December 13 to February 14, 2005, GaiaTech and STS completed a radiation survey of soils on the site, in the RAC, ROW and in selected areas of Ohio and Grand Streets in Chicago Illinois. The scope of work was designed to address potential impact from construction activites at the site, comply with the City of Chicago and CDOT permitting and to comply with USEPA requests.

- All of the fill materials above the native soils in the wedge/RAC area of the site (Phase I/western 1/2) have been completely surveyed in 18-inch lifts and any encountered radioactive impact soils properly excavated, and removed for proper disposal. No further testing will be necessary in this area for any current or future construction activities.
- All of the soils in the Ohio Street ROW bordering the current development portion of the site have been completely surveyed down to native soils except two small areas adjacent and under utilities, which were inaccessible. However, soils have at a minimum been surveyed to a depth of three feet bgs and should not interfere with any proposed construction activities in this area.
- All of the soils in the Grand Street ROW bordering the current development portion of the site have been completely surveyed down to native soils except for soils directly under the City electric line, which were inaccessible to surveying. Since soils have been surveyed to a depth of at least 3.5 feet over the electric line, this would not interfere with any anticipated construction activities.
- Soils and sidewalls of the proposed utility trenches located in Ohio and Grand Streets have been completely surveyed down to the depth of native soils. No further radiological surveying is necessary during construction activities. Additionally non-radiologically impacted soils have been excavated and removed for disposal in a landfill.

No further surveying of the Phase I/western 1/2/proposed development section of the property is necessary and construction activities can proceed without further screening or investigation. At such a time when the eastern portion/Phase II section is planned for development the RAC, ROW and streets will need to be surveyed under similar procedures developed during the screening activities conducted in the western section of the property.

## 7.0 REFERENCES

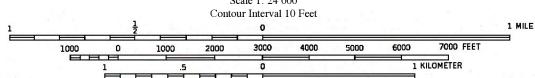
Operation Procedure for Gamma Spectroscopic Analysis of Soil Samples, USEPA information sheet, USEPA Region 5, Chicago, Illinois.

Before You Dig Tips for Construction Activities in Streeterville Area, February 2001, USEPA Region 5, Chicago, Illinois.

Figure 1

**Site Location Map** 







UNITED STATES GEOLOGICAL SURVEY CHICAGO LOOP QUADRANGLE ILLINOIS - COOK CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

1993





# Figure 2 Site Plan with Radiological Areas of Concern

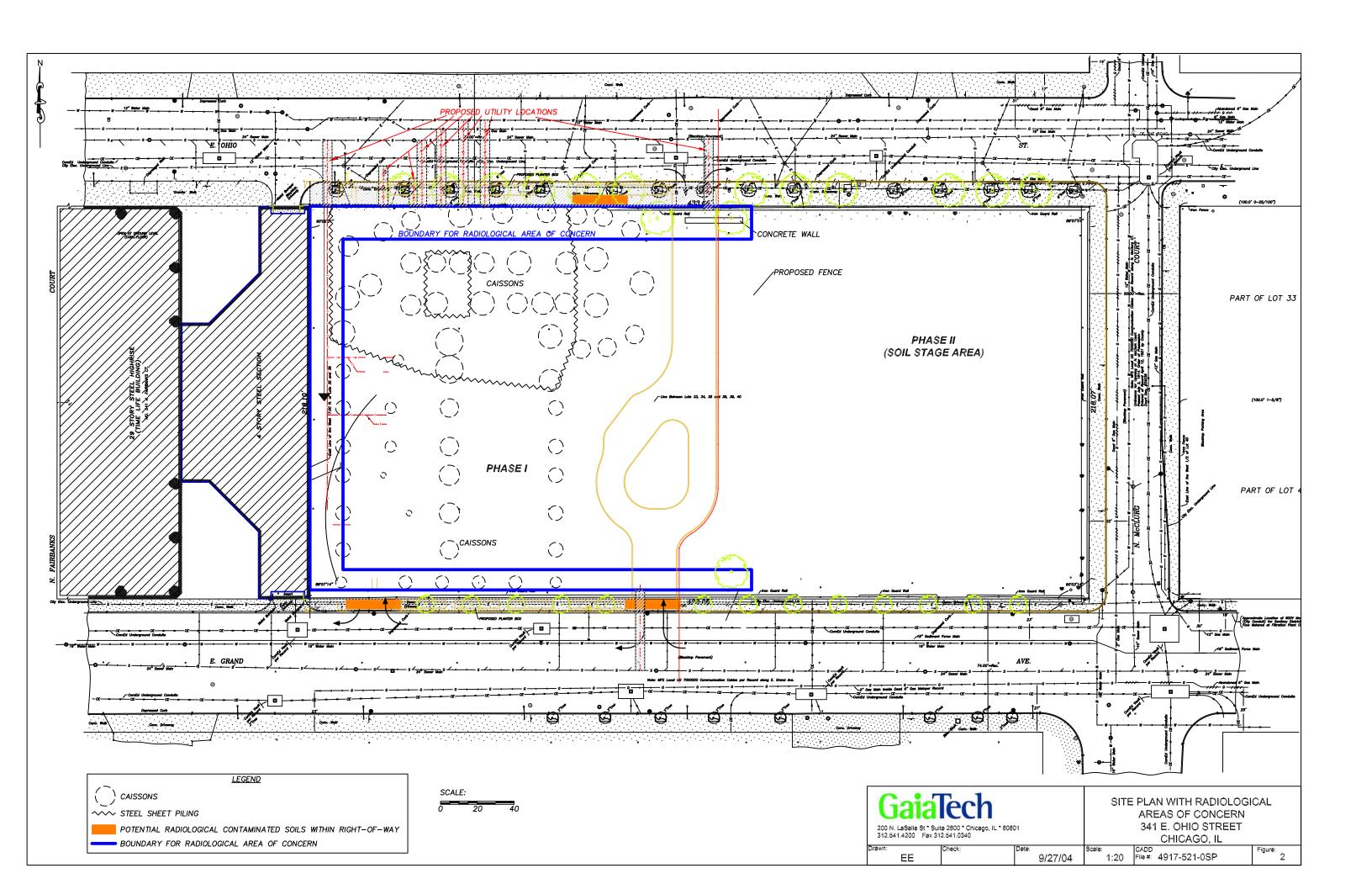
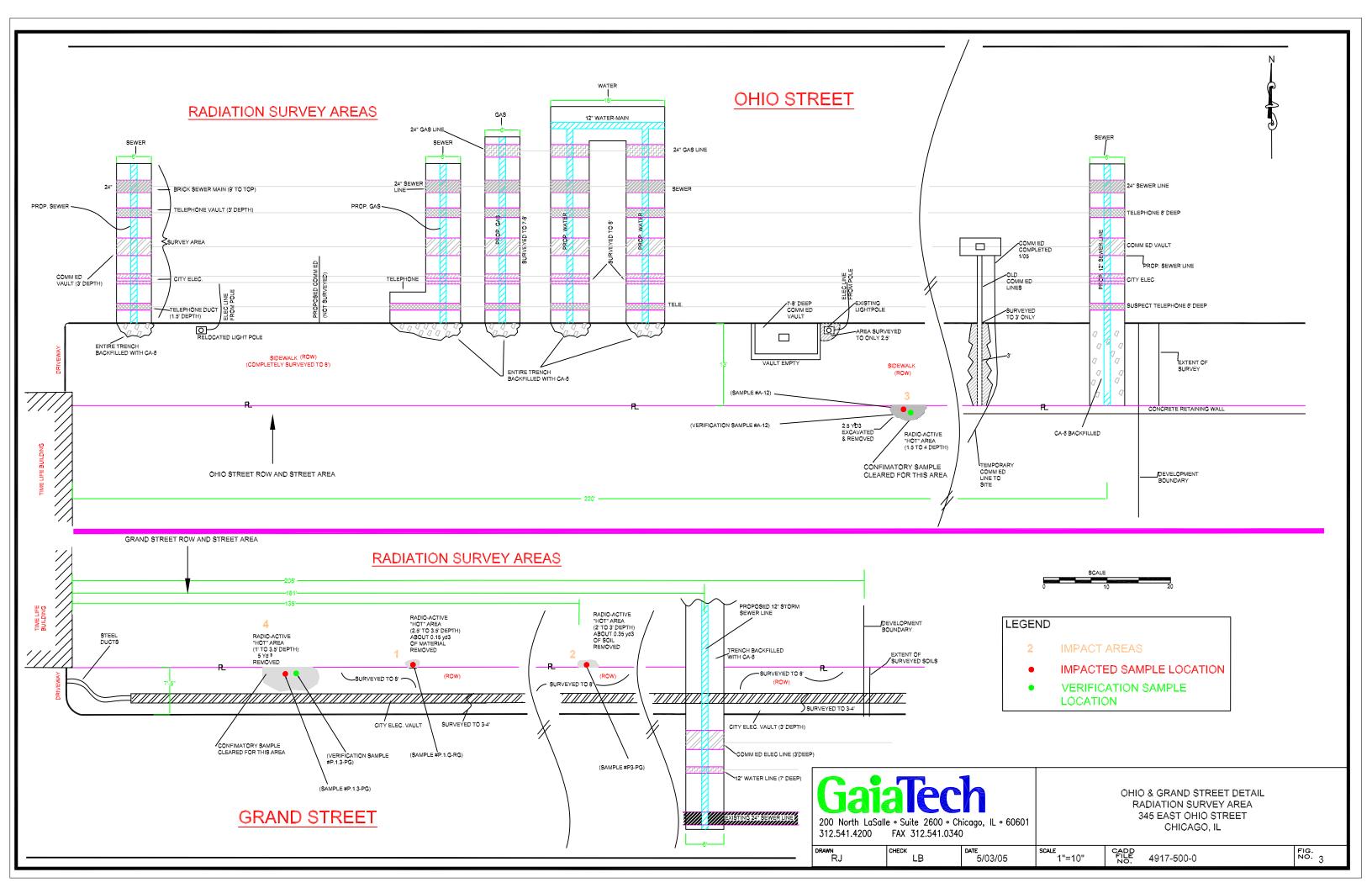


Figure 3
Ohio & Grand Street Detail



# Table 1

**High Resolution Gamma Spectroscopy Results – Impacted Samples** 

#### TABLE 1 HIGH RESOLUTION GAMMA SPECTROSCOPY RESULTS (Impact Soil Levels)

Sample Date	Impact Area	RSSI Spectrum File No.	STS Sample No.	Ra-226*	Ra-228**	Total Radium	USEPA Cleanup Level
12/13/2004	1 - south RAC	43690	P1.G-RG	1.73	10.8	12.6	7.1 pCi/g
12/15/2004	2 - south RAC	43691	P3-PG	4.05	15.9	20	7.1 pCi/g
12/15/2004	3 - north RAC	43692	A-12	4.08	42.5	46.6	7.1 pCi/g
2/2/2005	4 - Grand Street ROW	43728	P.1.3-PG	0.88	10.8	11.68	7.1 pCi/g

\* Pb-214 used as surrogate for Ra-226
\*\* Ac-228 measured as surrogate for RA-228
Shaded indicates that concentration exceeds USEPA Cleanup Level

# Table 2

**High Resolution Gamma Spectroscopy Results – Verification Samples** 

#### TABLE 2 HIGH RESOLUTION GAMMA SPECTROSCOPY RESULTS (verification samples)

Sample Date	Impact Area	RSSI Spectrum File No.	STS Sample No.	Ra-226*	Ra-228**	Total Radium	USEPA Cleasup Level
12/20/2004	3 - north RAC		verification (A-12)	0.658	0.544	1.202	7.1 pCi/g
2/9/2005	4 - Grand Street ROW		verification - P.1.3- PG	0.647	3.15	3.797	7.1 pCi/g

<sup>\*</sup> Pb-214 used as surrogate for Ra-226 \*\* Ac-228 measured as surrogate for RA-228

# Table 3 Waste Classification Soil Analytical Results

#### TABLE 3. WASTE CLASSIFICATION SAMPLE RESULTS (Detected Parameters)

Sample ID	Illinois Er	vironmental l	WC-1				
Data Campled	inmois Ei	ivii olililelitai i	17-Jan-05				
Date Sampled Lab Sample ID			46762				
Lao Sample 1D							40702
Sample Location	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Worker Soil Ingestion	Construction Worker Soil Inhalation	Migration to Class I Groundwater	Migration to Class II Groundwater	Soil Stockpile
VOCs - US EPA Method			mo	/kg			
5035/8260							mg/kg
Xylenes	1,000,000	320	410,000	320	150	150	0.011
SVOCs - US EPA Method 3540C/8270C			mg	/kg			mg/kg
Acenaphthene	120,000	*	120,000	*	570	2,900	<0.330
Acenaphthylene	NE	NE	NE	NE	NE	NE	0.901
Anthracene	610,000	*	610,000	*	12,000	59,000	1.55
Benzo(a)anthracene	8	*	170	*	2	8	6.2
Benzo(a)pyrene	0.8	*	17	*	8	82	6.98
Benzo(b)fluoranthene	8	*	170	*	5	25	6.85
Benzo(g,h,i)perylene	NE	NE	NE	NE	NE	NE	2.38
Benzo(k)fluoranthene	78	*	1,700	*	49	250	4.73
Chrysene	780	*	17,000	*	160	800	6.3
Dibenzofuran							0.388
Dibenzo(a,h)anthracene	0.8	*	17	*	2	7.6	1.41
Fluoranthene	82,000	*	82,000	*	4,300	21,000	9.8
Fluorene	82,000	*	82,000	*	560	2,800	0.398
Indeno(1,2,3-cd)pyrene	8	*	170	*	14	69	2.08
Naphthalene	41,000	270	4,100	1.8	12	18	0.543
Phenanthrene	NE	NE	NE	NE	NE	NE	4.28
Pyrene	61,000	*	61,000	*	4,200	21,000	8.72
Polychloronated Bipenhals (PCBs) USEPA Method 8082			mg/kg				
All Aroclors	1	*	1	*	*	*	Not Detected
Pesticides and Herbicides - US EPA Method 8081A & 8151	mg/kg						mg/kg
All Compounds	Varies	Varies	Varies	Varies	Varies	Varies	Not Detected
Total RCRA Metals -			_		Backg		
USEPA Method 3050/6010B		mg	g/kg			rations in	
(Method 7470A for mercury)		1.200		25,000		itan Areas	mg/kg
Arsenic	13	1,200	61	25,000		3	10.9
Barium Cadmium	140,000 2,000	910,000 2,800	14,000 200	870,000 59,000		.6	48.9 0.8
Chromium	10,000	420	4,100	8,800		5.2	9.2
Lead	400	NE	400	NE		6	704
Mercury	610	540,000	61	52,000		06	1.36
Selenium	10,000	NE	1,000	NE		48	<0.2
Silver	10,000	NE	1,000	NE		55	0.4
	10,000	1111	2,000	1111	0.		5.1
TCLP Metals - USEPA Method 1311					mş	g/L	mg/L
Arsenic	<u></u>				0.05	0.2	0.004
Barium					2	2	<1
Cadmium					0.005	0.5	0.004
Chromium					0.1	1	0.003
Lead					0.0075	0.1	0.166
Mercury					0.002	0.01	< 0.0005
Selenium					0.05	0.05	<0.002
Silver					0.05	*	< 0.001

#### Notes:

Sample analyzed at First Environmental Laboratories in Naperville, Illinois; Only detected compounds are listed.

Soil Remediation Objectives adapted from Illinois: Environmental Protection Agency (IEPA)

Title 35 Illinois Administrative Code 742 - TACO (July 2001).

RCRA: Resouce Conservation and Recovery Act; SVOCs: Semi-VOCs, VOCs: Volatile Organic Compounds

Shaded indicates that concentration exceeds a Tier 1 remediation objective

 $\ensuremath{\ast}$  : No toxicity criteria available for this route of exposure.

Other Analysis	(mg/kg)
Reactive Cyanaide	<10
Reactive Sulfide	<10
Phenols	<2.5
Flash Point (open cup)	<212° F
Paint Filter	Passed
pН	9.19

Appendix A

**EPA Approved Work Plan** 



# REVISED SOIL MANAGEMENT WORKPLAN 341 E. Ohio Street Chicago, Illinois

**Prepared for** 

**OGM Investors, LLC** 

**Prepared By** 

**GaiaTech Incorporated** 

**December 10, 2004** 

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#### 1.0 Introduction

This Revised Soil Management Workplan was prepared to document protocol, techniques and methodologies to be used to field-screen and manage soils surrounding the perimeter of the Phase I area of the property located at 341 East Ohio Street, Chicago, Illinois (the Site) prior to the site development activities. The Soil Management Workplan was initially submitted to the US Environmental Protection Agency (USEPA) for review on November 10, 2004. This Revised Soil Management Workplan has incorporated all comments made by the USEPA on November 30, 2004.

This workplan is not considered a Remedial Action Plan and as such only incorporates confirmatory sampling as it applies to worker safety and soil management considerations. The goal is to implement this Workplan before the site development to ensure it will be safe for trade people to work in the areas without environmental oversight during the development activities in the areas. OGM Investors, LLC plans to purchase the subject property on December 13, 2004. Immediately following the closing, this Soil Management Plan will be implemented.

The entire property has completed an approved remediation for radioactive and pesticide-contaminated soils. To date all identified radioactive and pesticide-impacted soils were removed from the Site, and all the post remediation samples have met the clean-up objectives established by the USEPA and/or Illinois Environmental Protection Agency (IEPA). Based on these closure activities, no land use or construction worker environmental restrictions apply on the property during site development.

Although the Site has completed an approved remediation, three areas immediately adjacent to the Site have been identified as containing radiologically impacted soils (Reference Figure 1). The areas are located within the City of Chicago owned right-of-way (ROW) along the Grand Avenue and Ohio Street sidewalks. Additionally, to avoid undermining the adjacent property to the west and the right-of-way to the north, east and south, a wedge of soil (with a slope of 1 vertical to 1.5 horizontal) was left undisturbed around the perimeter of the site. The inner limit of the wedge has been identified on Figure 1. Extensive boring and sampling within these soils has indicated that they do not contain radiological impacted soils. However, because the soils have not been screened in 18-inch lifts, the area between the inner boundary and the site perimeter will be designated as the radiological area of concern (RAC) for discussion purposes within this Workplan.

This Workplan will discuss all issues related to performing subsurface excavation for sheet piling installation, caisson drilling, utility installation, sidewalk removal, and landscaping installation within the ROW and the RAC. Although, as discussed in the above paragraph, previous perimeter subsurface sampling has only identified three contaminated areas, the procedures outlined within this plan will be implemented for subsurface work conducted anywhere within the ROW and RAC. As required by the USEPA and the City of Chicago, a special permit from Chicago Department of Environment to conduct subsurface work within the ROW is required. Due to the known impacts in the ROW, additional measures including radiation surveillance are being incorporated into the workplan for the ROW area. Any radiation-impacted soils exceeding the thresholds described in the following sections will be properly managed and disposed of off-site by Kerr-McGee.

#### **Background**

The Site is currently vacant and consists of approximately 2.16 acre acres, to be owned after closing by OGM Investors, LLC. (due the early December 2004). During the 2000 due diligence review, GaiaTech detected elevated levels of gamma radiation on the subject site. Based on the findings, on May 31, 2000, TRS (the prior owner) informed the USEPA of the elevated levels of radiation at the property. USEPA designated the subject property as the Lindsay Light II Site/(OU3/North McClurg Court). On July 13,

2000, USEPA notified TRS and Kerr McGee Chemical L.L.C. that the radioactive material at the property was off-site contamination related to the Lindsay Light Unilateral Administrative Order (UAO) and subject to the UAO as amended.

On May 15, 2002, the USEPA approved the TRS's Removal Work Plan for the radioactive soils at the property. From June 6, 2002 through October 2, 2002, TRS implemented the approved work plan to remove both thorium and pesticide-contaminated soils. Approximately 6,233 tons of radioactive soils were excavated, shipped and disposed of at the Envirocare Facility in Clive, Utah. Confirmatory samples met the soil clean-up criteria of 7.1 picoCuries per gram (pCi/g) total radium (Ra-226 + Ra-228) which was determined by the USEPA. Approximately 5,689 tons of pesticide-impacted soils were removed, transported and disposed of at the CID Landfill in Chicago, Illinois. The pesticide contamination was cleaned up to meet the Illinois Tier I soil remediation objectives for a residential property. On December 31, 2002, TRS through their contractor, STS Consultants, LTD., completed a Completion Report – Time-Critical Removal Action for the property and submitted it to the USEPA.

On March 21, 2003, USEPA issued a letter of Completion of Work for Lindsay Light II Site/(OU3/North McClurg Court), 341 East Ohio Street, Chicago, Illinois. USEPA concurred that TRS removed all radioactive-contaminated material within the footprint of the subject property. However, three radioactive-contaminated areas were identified below the immediately adjacent Grand Avenue and Ohio Street sidewalks. Proper measures and radiation surveillance as required by the City of Chicago permit "moratorium" will be required if the areas are disturbed.

# 2.0 Permits

All necessary permits and sign-offs will be secured prior to the implementation of excavation activities within the Site or ROW. Permits and sign-offs for work may include but are not limited to the following:

- Foundation permit; (Under General Contractor Walsh Construction #20419052)
- Excavation permit; (Under General Contractor Walsh Construction)
- Department of Environment Form No. DOE\_ROW.01 (Received 11/22/04)
- Board of Underground Review; (Reviewed by Zenon Stuck 12/04)
- Street closure/sidewalk closure permit (Reviewed by Mike Simon 12/04);
- Consultation with sewer department;
- Meetings with utilities; and
- Consultation with the Chicago Department of Environment

As the City of Chicago has a moratorium against performing any work in the streets and sidewalk areas located within the Central Business District that starts November 20, 2004 through January 3, 2005, the proposed radioactive survey and soil testing will be conducted only within the footprint of the subject property in December 2004. The radioactive survey and soil testing will be conducted for the streets and the sidewalks of the site in January 2005.

# 3.0 Incorporated Documents

In addition to the practices and procedures outlined in this Workplan, the following activities will also be conducted in accordance with the Time-Critical Removal Action Workplan, Lindsay Light II Site/(OU3/North McClurg Court), 341 East Ohio Street, Chicago, Illinois, prepared by STS, which was approved by the USEPA on May 15, 2002:

- Gamma radiological surveying
- Soil stockpile sampling (If required, although no stockpiling is anticipated)
- Equipment calibration
- Personal air monitoring
- Decontamination procedures for equipment potentially contaminated with radiologically impacted soils.

Those portions of the Removal Action Workplan applicable to the above listed activities are hereby incorporated by reference.

Incoming backfill for the sidewalk area adjacent to the site will be measured for its total radium concentration. All incoming soils will not exceed 3.7 picoCuries per gram (pCi/g) and on-site soil will be used so long as it is under the clean-up criteria of 7.1 pCi/g, total radium. No testing will be required if CA-6 (or crushed stone) is used as backfill.

# 4.0 Subsurface Excavation

Potential subsurface work within the ROW or RAC includes (but is not limited to) the installation of steel sheet piling, drilling for caissons, installation of utilities, removal of concrete sidewalks, and the installation of landscaping planter areas. After removal of the impacted soils and/or placement of shielding materials, and no elevated levels of radiological screening are detected. If other areas of impact are detected beyond the three known areas of radioactive impact, restrictions will be applied as necessary under the structures of this Soil Management Plan, until such a time as the new areas are designated clean or decontaminated.

The following contractors/consultants will be involved with the project:

GaiaTech, Inc. - Overall project planing, permitting, onsite coordination and project management.

<u>STS Consultants</u> - Subcontractor to GaiaTech that will be providing additional technical assistance and experienced screening technician and certified health physicist. STS will also provided personnel monitoring services and collect any samples as necessary.

<u>Thermal Remediation Inc.(TRI)</u> - Qualified remediation contractor subcontracted to GaiaTech that will be providing excavation equipment and operators during trenching and remedial activities.

<u>Kerr McGee</u> - Will be providing waste containers and providing monitoring, hauling and disposal of any waste generated during onsite and ROW activities.

<u>Walsh Construction</u> - General Construction contractor will not be involved in the screening or remedial activities. All construction work will proceed only after an area has been screened, shielded or remediated as necessary to comply with state and federal regulations. General contractor will not be allowed to operated in the area where screening or remedial activities are being conducted.

#### 4.1 General Excavation Guidelines

Prior to the commencement of subsurface work within the ROR or RAC, a field technician under the direction of a certified health physicist will be present on site for the purpose of surveying soils for radiological contamination. Soil surveys will be conducted with a calibrated hand-held gamma-ray detector Ludlum Model. The gamma detector will be calibrated using calibration blocks from Kerr McGee.

Calibration for the Ludlum Model 2221 with a two by two (2 x 2) sodium iodide probe with calibrations for shielded and unshielded probe are attached in Appendix A (Standard operating Procedures for instrument calibration). Calibration of the instrument will be conducted with USEPA personnel present or with their consent. A form will be completed with the survey results and will contain location, type of instrument, serial number, person doing the measurement, date and time of measurement. Each instrument will have a serial number and calibration results from the Kerr-McGee West Chicago Facility that is in response to calibration blocks from the West Chicago site. Field technicians and the project health physicists resumes are attached in Appendix B.

All soils will be screened using a hand-held gamma-ray detector and excavated in lifts not to exceed 18-inches. Soils found to have readings that correlate to a soil concentration in excess of 7.1 pCi/g

total radium will be considered radiologically impacted. Radiologically impacted soils shall be managed and disposed in accordance with Section 5.0.

#### 4.1.1 RAC Soils

Soils within the RAC have been evaluated with numerous subsurface borings during previous site investigations and closure activities, and there is a high degree of certainty that soils in this area are not radiologically impacted. Soils within this area will be screened by a field technician with a handheld gamma-ray detector. If the initial survey indicates readings that correlate to a soil concentration equal to or below 7.1 pCi/g of total radium, the soils will be classified as clean. These soils can be managed anywhere within the site boundaries by the prime contractor without any further considerations. If exceeding 7.1 pCi/g total radium, radiologically-impacted soils shall be managed and disposed in accordance with Section 5.0. And the USEPA will be informed of such the findings.

# 4.1.2 ROW Soils

Soils excavated beneath the ROW will be initially surveyed by a field technician with a hand-held gamma-ray detector. Readings will be made of the soils in-situ by lowering the probe down the sidewalls of the excavation to check for radium concentrations as the excavation proceeds and all removed soils on the top surface of every bucket will be screened as well. If the initial survey indicates readings that correlate to total radium concentrations equal to or below 7.1 pCi/g of total radium, the soils will be deemed acceptable to be managed in place or returned to the original excavation. Soils that are under the 7.1 pCi/g will be placed on plastic until they can be returned to the excavation. If the radiation survey indicates that total radium concentrations exceed 7.1 pCi/g, the radiologically-impacted soils will be excavated and placed in Kerr McGee-supplied containers (metal shipping containers with metal integrated top) pending off-site disposal in accordance with Section 5.0. In general the depth of the excavation will be dependant on the depth of the fill materials in any given location, that could potentially contain impact. Excavation depth is not expected to exceed 10 to 12 feet.

No stockpiling of radiologically-impacted soils will be conducted. As discussed in Section 5.0, all impacted soils will be transferred to appropriate containers for proper offsite disposal. No long term storage of the containers is anticipated and excavated soils will be placed in the containers for quick transportation off site. The containers will be placed in a fenced and locked enclosure and the container will be locked and appropriate warring signs placed on the container. When they are full, they will be properly transported off-site for disposal by Kerr McGee in approximately one week, but not more than one month.

### 4.1.3 Concrete Rubble

All concrete rubble removed from the RAC or ROW will be surveyed for radioactivity. If the initial survey indicates readings that correlate to total radium concentrations equal to or below 7.1 pCi/g of total radium, the rubble will be considered clean and disposed as construction debris. If indicated readings correlate to total radium concentrations exceeding 7.1 pCi/g of total radium, the rubble will be broom cleaned to remove any adhering soil and resurveyed. If the resurvey indicates that the material has been decontaminated, the rubble will be disposed as construction debris. If the resurvey indicates that the material has not been decontaminated, the rubble will be disposed as radiologically impacted in accordance with Section 5.0.

Procedures for the surveying of concrete debris, includes the screening of bottom and side surfaces of the concrete with the Ludlum Model 2221 survey instrument. Any soils adhering to the bottom of concrete will first be shoveled/ swept off and surveyed independently. Concrete with a very rough texture will be surveyed in all indentations to insure proper coverage of the material with the survey instrument.

# 4.2 Sheet Piling

Current construction plans call for the installation of steel sheet piling along a portion of the western and northern perimeter of the site. The sheet piling along the western perimeter falls within the RAC (approximately 10-18 feet within the western property boundary line). The sheet piling along the northern perimeter will be installed approximately 1 to 2 feet within the ROW, and has been approved by the City of Chicago Department of Construction and Permits (DCAP).

#### 4.2.1 Western Perimeter

The installation of steel sheet piling will be completed by the general construction contractor after the area has been surveyed. Excavation test pits will be excavated where sheet pilling will be installed along the western part of the site were it intersects the RAC boundary. After the survey of the proposed location of the sheet piling, the contractor can install the sheet piling if no radiological impacted soils were found. If radiological impacted soils are found the soils will be excavated to meet 7.1 pCi/g. Soils will be surveyed, excavated and handled in accordance with Sections 4.1 and 5.0.

# 4.2.2 Northern Perimeter

Sheet piling installation along the northern perimeter will likely require the removal of concrete overlying the ROW. A qualified remedial contractor shall remove the concrete in accordance with Section 4.1 & 5.0. Sheet piling will only be installed after the area has been screened and remediated if necessary.

After the removal of overlying concrete, the surface soils overlying the proposed sheet piling location will be surveyed. Test pits will be excavated and screened prior to installation of sheet pilling in this area. If screening readings indicate that surface soils are not radiologically impacted, the primary contractor can proceed with the sheet piling installation without any further oversight. However, if readings indicate the soils are radiologically impacted, a qualified remedial contractor will remove the impacted soils down to native soils (approximately 8-12 feet bgs) or a depth allowing installation of shielding materials. Soils will be surveyed, excavated and handled in accordance with Sections 4.1 and 5.0.

After the placement of shielding materials, the area will be resurveyed for radiation to ensure radiation levels are below 2 mrem/hr, as defined in Table 7.1 of the attached Health and Safety Plan. Suitable shielding materials include but are not limited to clean soils, plastic sheets, plywood and/or concrete. After the placement of shielding the remaining impact will also comply with the 50 mrem/yr under Title 10, Part 20.1302(b)(2)(ii) of the Code of Federal Regulations (CFR). GaiaTech in conjunction with the recommendations of the Certified Health physicist will set time limits for exposure to anticipated radiation levels to screening technicians or other project workers.

No subsurface work shall be conducted by the primary contractor within the radiological area of concern (RAC) or within the right-of-way (ROW) until soils within the vicinity of the proposed work have been surveyed under the direction of a certified health physicist.

# 4.3 Caisson Drilling

The installation of caissons has the potential to generate radiologically impacted soil cuttings from the upper 12-feet of soils. As such, special precautions will be taken to ensure that all soils in the caisson area meet the "clean soil" criteria established in Sections 4.1.1 & 4.1.2.

As indicated on Figure 1, a number of caisson are proposed within the RAC along the northern, southern, and western perimeters of the Phase I area of the property. For each of these locations, a field technician will survey the soils while a qualified remedial contractor removes soils overlying the drilling location down to native soils (approximately twelve feet).

Areas that are designated for caisson installation will first have locations surveyed and marked on the property. The surface of the excavation area will be initial checked with the screening instrument. At all locations, an excavation will be opened whereby all soils may be screened *in-situ* on the sidewalls and floor of the excavation. If soils do not appear to contain elevated radiation readings the soils will be removed from the excavation and the top of the bucket screened with the designated screening instrument. If soils are found with no elevated levels the soils will be placed on-site. If elevated levels are found (above 7.1 pCi/g), the impacted soils will be placed in a radiation container for disposal. After screening is completed, clean excavated soils will be re-compacted into the excavation.

As indicated in Section 4.1.1, soils surveyed within the RAC and determined to be clean can be backfilled into the excavation or managed on-site as directed by the prime contractor.

#### 4.4 Concrete Sidewalk Removal

Site development will require the removal and subsequent replacement of sidewalks overlying the right-of-way along portions of the north and south perimeter of Phase I portion of the site. A qualified remedial contractor shall remove the concrete in accordance with Section 4.1. After the removal of overlying concrete, surface soils will be surveyed by a field technician. If the surface soils are determined to be radiologically impacted, all soils within the vicinity of the elevated readings will be excavated down to native soils (approximately 8-12 feet bgs) or a depth allowing installation of shielding materials. Depending on the potential need for shielding, it may consist of plastic sheeting, plywood or concrete. Soils will be surveyed, excavated and handled in accordance with Sections 4.1 & 5.0.

After the placement of shielding materials, if used, the area will be resurveyed by a field technician for radiation to ensure radiation levels are below 2 mrem/hr. Suitable shielding materials include but are not limited to clean soils, gravel, plywood and/or concrete pavement.

For the areas of ROW where no utilities or planters are located, and no elevated levels of radiological screening are detected, no additional excavation or survey will be conducted as it is safe for the prime contractor to install new concrete pavement.

# 4.5 Utility Installation

Site development will require the installation of utilities within the ROW and the RAC. Proposed utility line locations are indicated on Figure 1. For each of these locations, a qualified remedial contractor will remove concrete and soils overlying the utility line location to the required depth of utility installation. Soils will be surveyed, excavated and handled in accordance with Sections 4.1 &

5.0. All radiation surveying will be done prior to any construction activities at the site or in the ROW. Surveying will be done on the ground surface prior to excavation as well as *in-situ* along the floor and sidewalls of the excavation and in the bucket as soils are removed from the excavation.

Upon completion of the trench excavation, the floor and walls will be surveyed by a field technician for radiation. If the excavated areas are found to contain radiologically impacted soils, the trench will be excavated down to native soils (approximately 8-12 feet bgs) or a depth below the proposed depths of the utilities, allowing installation of shielding materials.

After the placement of shielding materials if used, the area will be resurveyed for radiation to ensure radiation levels are below 2 mrem/hr. Suitable shielding materials include but are not limited to clean soils/gravel, plywood and/or concrete pavement.

Upon confirmation that radiation levels meet the designated 2 mrem/hr criteria, the primary contractor will be free to install utilities as required and backfill the excavation, without further environmental oversight.

# 4.6 Installation of Landscaping Planter Areas

As indicated on Figure 1, several landscaping planter areas are proposed within the ROW. For each of these locations, a qualified remedial contractor will remove soils overlying the proposed landscaping planter area to the depth (approximately 4 to 8 feet bgs) required by the landscaping contractor. Soils will be surveyed, excavated and handled in accordance with Sections 4.1 & 5.0.

Upon completion of the planter excavation, the floor and walls will be surveyed for radiation. If the excavated areas are found to contain radiologically impacted soils, the excavation will continue down to native soils (approximately 8-12 feet bgs) or below the proposed depths of the bottoms of the planters allowing installation of shielding materials.

After the placement of shielding materials if used, the area will be resurveyed for radiation to ensure radiation levels are below 2 mrem/hr. Suitable shielding materials include but are not limited to clean soils/gravel and/or concrete pavement.

After no elevated levels of radiological screening are detected, the primary contractor or landscaping contractor will plant the trees as required and backfill the excavation, without any environmental oversight.

# 5.0 Radiologically Impacted Soil Management & Disposal

Soils identified as radiologically impacted shall be placed directly into a shipping container suitable for rail shipment to an approved landfill. The containers will be placed in a fenced and locked enclosure and the container will be locked and appropriate warring signs placed on the container.

Kerr-McGee will be responsible for supplying approved shipping containers and the transportation and disposal of radiologically impacted materials removed from the site. That responsibility includes health physics personnel to survey transport containers, subcontractor transportation and logistics personnel, and documentation for shipping and disposal. When they are full, they will be properly transported off-site for disposal by Kerr McGee in approximately one week, but not more than one month.

All work involving the excavation and/or relocation of radiologically impacted soils shall be conducted by a qualified remedial contractor utilizing workers with appropriate OSHA 40-hr trained workers.

# 6.0 Health & Safety Plan

All work involving the excavation, handling, or disposal of potentially radiologically impacted soils or identified radiologically impacted soils will be conducted in accordance with the attached Health & Safety Plan (Attachment 1). Soil screened with a hand held instrument will not be considered as a final determination of soil concentration, but will provide the necessary information on working conditions and the need for shielding or soil removal. Soil concentrations measured with an appropriate laboratory instrument, such as a sodium iodide counter used with the NUTRANL equipment or with germanium counters used with gamma spectroscopy equipment, will be considered as a final determination.

Potentially radiological impacted soils are defined as follows:

• Soils within the RAC or within the ROW that have not been surveyed by a field technician under the direction of a certified health physicist using a calibrated hand-held gamma-ray detector. This will be used to provide information on safe working conditions during construction.

Identified radiological impacted soils are defined as follows:

- Soils within the RAC or within the ROW that have been surveyed by a field technician under the direction of a certified health physicist using a calibrated hand-held gamma-ray detector.
- Indicated readings correlate to a soil concentration that exceeds 7.1 pCi/g total radium.

# 7.0 Air Monitoring

Personnel air monitoring will be conducted during all activities involving the excavation or handling of radiologically impacted soils in accordance with the attached Health and Safety plan.

Appendix B

**USEPA** Correspondence

REPLY TO THE ATTENTION OF



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONS 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

NOV 3 0 2004

# VIA FACSIMILE (312) 541-0340 AND U.S. MAIL

Mr. John Yang GaiaTech 200 North LaSalle Street, Suite 2600 Chicago, Illinois 60601

Pory Tihinen
202-1537 Soil Management Plan, Former Time Life Property, 341 East Ohio Street, Chicago, RE: Ulinois, prepared for OGM Investors, LLC, by GaiaTech, Inc., dated November 10, 2004, (Lindsay Light II /TRS Property/341 East Ohio, Chicago, Illihois)

Dear Mr. Yang:

We have reviewed the above document and have the following general and specific comments:

# **General Comments**

- 1. U.S. EPA policy will be to reference and rely on Federal regulations unless Illinois regulations are more restrictive.
- 2. It is U.S. EPA protocol to rely foremostly on soil concentration for verification of radiologically clean areas. Gamma surveys are good seek-and-find methods and will give a reasonable approximation of soil concentration, but they are not the fundamental parameter for designating "clean" areas. Verification areas will be no more than 100 square meters in extent when working on the contaminated sidewalks.
- 3. Temporary storage of radiologically contaminated soils must be tied to surveillance during storage and a time limit must be specified. Furthermore, a secure location is stated. Does this mean you will have a security guard after hours?
- Since the city has a moratorium in the Central Building District, restricting your work to the building footprint from November 20, 2004 until January 3, 2005, clearly state the methods/techniques that will be used to keep the contamination identified under the sidewalks out of your footprint since you plan on working in December 2004.

TO: 3125410340

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# Specific Comments

Page 4 of 11, Section 3.0 - It should be noted that incoming backfill for the sidewalk excavations must be measured for its total radium concentration, which must not exceed 3.7 picoCuries per gram (pCi/g). On-site soil may be used as backfill so long as it is under the clean-up criterion of 7.1 pCi/g, total radium.

- 2. Page 5 of 11, Section 4.0, paragraph 1 If development extends beyond the three known radiation areas along Grand and Ohio where radiation surveys are necessary then restrictions must be applied and, the strictures of this Soil Management Plan followed, until those areas are designated clean or decontaminated.
- 3. Page 5 or 11, Section 4.1- The type of instrument to be used must be specified and the Standard Operating Procedures for calibrating the instrument and for its use during site surveillance must be provided. In order to standardize measurements and ensure comparability with U.S. EPA instruments, it is recommended that the Ludlum Model 2221 with a two by two (2 x 2) sodium iodide probe be used, with calibrations for both a shielded and unshielded 2 x 2 sodium iodide probe. We would also expect to see some kind of form to document survey results. This form should state person doing the survey, instrument used, serial #, results, cut-off on instrument, date and time survey performed. Each instrument should have a serial #, calibration results from West Chicago Facility, that is the response to the West Chicago blocks, etc. Provide the resume of the field technician and the Certified Health Physicist mentioned in this section.
- 4. Page 5 of 11, Section 4.1.2 To every extent possible, surveys should be made of soil institu. In addition, measurements can also be made along the top surface of soils in the excavation bucket.

"Temporary" should be explained with regard to time and to protection of these containers.

Native soils do not need to be excavated to 8-12 feet below grade surface unless there is contamination in this column. Only contaminated soil requires excavation.

- 5. Page 5 of 11, Section 4.1.3 The surveillance procedure for concrete must be explained in more detail. Surveillance of rubble is different than that for soil because of its rough surface.
- 6. Page 6 of 11, Section 4.2.1 How are you going to install the sheet piling? That is, are you pressing, drilling, or vibrating?
- Page 6 of 11, Section 4.2.2, paragraph 3 Selection of 2 mrem/hr still will require a limitation to 50 mrem/yr according to Title 10, Part 20.1302(b)(2)(ii) of the Code of Federal Regulations (Note: It is U.S. EPA's practice to refer to Federal regulations for

criteria unless Illinois regulations are more restrictive). For unrestricted access by workers, an allowable time limit must be set as well.

8. Page 6 of 11, State the names of all contractors involved. If not yet known, please provide this information as soon as it is known. For example, page 6 of 11, mentions a primary contractor and qualified remedial contractor.

Page 7 of 11, Section 4.3 - There needs to be more specificity on how caisson soils will be surveyed.

10. Page 7 of 11, Section 4.4 - What kind of "shielding materials" are you considering?

Page 7 of 11, Section 4.5 - Soils should be surveyed before any excavation occurs and, during the excavation both in the bucket and on the floor and walls of the excavation (insitu) measurements prior to excavation.

- 12. Page 10 of 11, Section 6.0, bullets Hand held survey instrument readings in counts per minute are not the final, official, determinant of soil concentration. Soil concentration must be measured with laboratory instruments, such as the sodium iodide counters used with the NUTRANL equipment or with the germanium counters used with gamma spectroscopy equipment.
- 13. HASP, page 1, paragraph 1 It is not clear how trade people will be covered, radiologically, under their own health and safety plans. It may not be reasonable to assume that these plans have any radiological component. In which case, how will this group be protected radiologically?
- HASP, page 1, paragraph 2 It appears there is a typo in that CFI should probably be CFR.
- 15. HASP, page 4, Section 4.1 It should be noted that there are two radiums (Ra-226, Ra-228) and two radons (Rn-220, Rn-222) that are the principal contaminants on this site.
- HASP, Section 5.1 Training should include discussion of radiation basics.
- HASP, Section 7.1 A fundamental protocol for the U.S. EPA is that there be "no visible dust."
- 18. HASP, Section 7.2 There needs to be a more detailed explanation of how the air filters will be analyzed, both lapel monitor filters and high volume air samplers. It is important that there be an early analysis, the next morning, of the filter so that any deviations from normal can lead to modifications of work practices that same day. The early reading may only be sufficient to compare to preceding early measurements to detect abnormal levels, but this may be sufficient to alter work practices. Details should include how filters will be sent to the lab promptly. There needs to be an explanation of how samples can be sent

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( Note of

to a lab, analyzed, and results returned, all in the day after collection. The time for which final concentrations are returned from the lab should be specified.

The radionuclide of comparison for air concentrations will be the most restrictive radionuclide in the thorium-232 chain. If gross alpha measurements are used, this may require stating the number of alpha decays used for conversion of gross alpha concentration to radionuclide-specific concentration.

Regulatory comparisons should be to Federal regulations and only Illinois regulations if they are more restrictive.

Paragraph 4 refers to analytical procedures but none are included in this document. These need to be provided.

In paragraph 5, a count is referred to but the type is not designated. This needs to be specified.

- 19. HASP, Section 7.5 Radiation surveys of excavations, backhoe buckets, etc. for seek-and -find efforts should be done with a sodium iodide detector. A micro-R meter is not a good instrument for this type of activity. It is acceptable when dose needs to be measured.
- 20. HASP, Section 7.6 Decontamination should be done to regulatory levels as well as to ALARA. For example, release of equipment should meet Nuclear Regulatory Commission (NRC) Regulatory Guide 1.86 level and Illinois Division of Nuclear Safety levels if these are more restrictive.
- 21. HASP, Section 7.7.1 It is not standard practice to smear workers to determine if they are contaminated. Usually this is done with a Geiger-Mueller (GM) pancake detector. We would prefer you use a GM pancake.

Actions should also be based on gamma exposure rates.

It has been U.S. EPA experience on thorium sites in Strecterville and West Chicago, Illinois that the thorium component is insoluble, but the uranium component has been found to be soluble. The radium levels (Ra-226, Ra-228) may or may not be soluble depending upon the chemical form.

- 22. HASP, Section 8.0 Work in exclusion zones must be in modified Level D which should include, at the least, hard hat, safety glasses, tyvek coveralls, surgical gloves, safety shoes, and bootics.
- HASP, Section 9.0 -There needs to be a numerical criterion at which an individual will be considered.

TO: 3125410340

- 24. HASP, Section 9.4 - The segregation process needs to be discussed in more detail, including what types of containers will be used for radioactive and non-radioactive wastes.
- 25. HASP, Section 10.1- If water is to be used for decontamination of individuals or equipment, the monitoring and disposal process must be specified, including criteria to be applied.

If you have any questions regarding this correspondence, please contact me at (312) 886-3601 or Larry Jensen, Health Physicist, at (312) 886-5026. Please direct any legal questions to Mary Fulghum, Associate Regional Counsel, at (312) 886-4693 or Cathleen Martwick, Associate Regional Counsel at (312) 886-7166.

Sincerely,

Verneta Simon

On-Scene Coordinator

cc: Rhamat Begum, Chicago Department of Environment Benct Haller, Chicago Department of Planning and Development



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

# REGION5 77 WEST JACKSON BOULEVARD CHICAGO, 1L 60604-3590

REPLY TO THE ATTENTION OF: SE-5J

DEC 0 7 2004

# VIA FACSIMILE (312) 541-0340 AND U.S. MAIL

Mr. John Yang GaiaTech 200 North LaSalle Street, Suite 2600 Chicago, Illinois 60601

RE: Soil Management Plan, Former Time Life Property, 341 East Ohio Street, Chicago, Illinois, prepared for OGM Investors, LLC, by GaiaTech, Inc., dated November 10, 2004, (Lindsay Light II /TRS Property/341 East Ohio, Chicago, Illinois)

Dear Mr. Yang:

On Thursday, December 2, 2004, we discussed our comments on the above-referenced plan, which were sent to you in a letter dated November 29, 2004. Our discussion centered on General Comment #2, #4, and Specific Comment #1. These comments have been reproduced below to ease discussion.

#### **General Comments**

- 2. It is U.S. EPA protocol to rely foremostly on soil concentration for verification of radiologically clean areas. Gamma surveys are good seek-and-find methods and will give a reasonable approximation of soil concentration, but they are not the fundamental parameter for designating "clean" areas. Verification areas will be no more than 100 square meters in extent when working on the contaminated sidewalks.
- 4. Since the city has a moratorium in the Central Building District, restricting your work to the building footprint from November 20, 2004 until January 3, 2005, clearly state the methods/techniques that will be used to keep the contamination identified under the sidewalks out of your footprint since you plan on working in December 2004.

# Specific Comments

1. Page 4 of 11, Section 3.0 - It should be noted that incoming backfill for the sidewalk excavations must be measured for its total radium concentration, which must not exceed 3.7 picoCuries per gram (pCi/g). On-site soil may be used as backfill so long as it is under the clean-up criterion of 7.1 pCi/g, total radium.

General Comment # 2 and Specific Comment # 1 are directed towards any sidewalk excavation work that involves the three known locations on East Grand and Ohio Streets. U.S. EPA expects your client to remove and dispose of any contaminated soil in these three known areas, collect a sample, and, if below 7.1 pCi/g, contact us. U. S. EPA will survey the area, and collect a composite sample. In the past the responsible party/property owner has analyzed the sample on NUTRANL software because this is quick and it has been found to give conservative results. If you wish to use gamma spectroscopy we can explain to you the parameters we expect to be used. If the soil sample is below or equal to 7.1 pCi/g, we can approve the area as "clean". Then, U.S. EPA will take the sample and send it to either Argonne National Laboratory or USEPA's National Air and Radiation Environmental Laboratory for the official verification analysis. It would be very helpful for us to have your sample results before we send out samples for the official verification

If backfill for the sidewalk is obtained, it must not exceed 3.7 pCi/g or use CA-6, or use soil from the building foot-print. Please note we are not expecting any soil from the footprint to exceed 7.1 pCi/g. At any rate, we would like to be kept informed by a prompt telephone call and follow-up written report of any radiological analyses.

General Comment #4 dealt with how you were going to start the building footprint work. You have explained that you will not be working within 5 feet of the sidewalk and that there will not be any way for the three areas known to have contamination under the sidewalk to be moved into the building footprint.

If you have any questions regarding this correspondence, please contact me at (312) 886-3601 or Larry Jensen, Health Physicist, at (312) 886-5026. Please direct any legal questions to Mary Fulghum, Associate Regional Counsel, at (312) 886-4693 or Cathleen Martwick, Associate Regional Counsel at (312) 886-7166. Otherwise, we assume that all comments presented in our letter dated November 29, 2004, will be incorporated..

Sincerely,

Verneta Simon

On-Scene Coordinator

Vernila Sinon

cc: Rhamat Begum, Chicago Department of Environment
Benet Haller, Chicago Department of Planning and Development



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

# REGION5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

JAN T 2 2005

REPLY TO THE ATTENTION OF E-5.1

# VIA FACSIMILE 312 440-0809 AND U.S. MAIL

Mr. Eric Hinds Golub & Company 625 North Michigan Avenue Chicago, Illinois 60611-3110

RE:

Remaining Radiological Contamination at 345 East Ohio and Ohio, Grand & McClurg, Chicago, Illinois (Lindsay Light II /TRS Property/341 East Ohio, Chicago, Illinois)

Dear Mr. Hinds:

On Friday, December 17, 2004, we discussed with you and your consultant, (Larry Bertsch, and John Yang, GaiaTech), remaining radiological contamination in the "wedge" at 345 East Ohio and at Ohio, Grand, and McClurg (OGM). The wedge is the area 5 feet from the sidewalk and is identified as the Radiological Area of Concern (RAC) in your Soil Management Plan dated November 10, 2004.

U.S. EPA agreed that the entire wedge warrants investigation, however, it can be done in stages. The wedge on your immediate development at 345 East Ohio should be investigated first and then filter fabric placed on the OGM portion until it is developed. We did not discuss the wedge investigation in detail, but we would expect it to extend to the depth of natural sand and radiological monitoring of the soil as you remove it with the bucket. We agreed that filter fabric should be installed on the OGM portion since it will help distinguish the wedge from the "clean" spoils removed from 345 East Ohio and placed on the OMG portion, and the additional soil brought in to bring the OGM to grade. In addition, the exact location of the filter fabric should be documented on a map/drawing so when development occurs this knowledge can be utilized. For example, during our meeting you explained that the owner/developer of the site planned to transfer to the City of Chicago approximately 25 feet on the eastern part of OGM to accommodate the expansion of McClurg Court. Therefore, we would expect that prior to the expansion the overburden would be removed and then the material under the filter fabric would be accessible for radiological screening before construction of McClurg Court.

<sup>&</sup>lt;sup>1</sup>341 East Ohio has been divided into two portions: west portion of 341 East Ohio is now called 345 East Ohio and is under development, and the east portion is called OGM and will be developed at later date.

Keep in mind, that given the long-lived nature of thorium contamination, if Golub decides to leave any radiological contamination at the property or does not conduct an investigation capable of identifying any existing contamination, long-term institutional controls to prevent a release to the public or the environment may be necessary.

If you have any questions regarding this correspondence, please contact me at (312) 886-3601 or Larry Jensen, Health Physicist, at (312) 886-5026. Please direct any legal questions to Mary Fulghum, Associate Regional Counsel, at (312) 886-4693 or Cathleen Martwick, Associate Regional Counsel at (312) 886-7166.

Sincerely,

Verneta Simon

On-Scene Coordinator '

cc: Larry Bertsch and John Yang, GaiaTech 200 North LaSalle Street, Suite 2600

Chicago, Illinois 60601

Rhamat Begum, Chicago Department of Environment

Benet Haller, Chicago Department of Planning and Development



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONS 77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JAN T 2 2005

REPLYTO THE ATTENTION OF E-51

# VIA FACSIMILE 312 440-0809 AND U.S. MAIL

Mr. Eric Hinds Golub & Company 625 North Michigan Avenue Chicago, Illinois 60611-3110

RE: Remaining Radiological Contamination at 345 East Ohio and Ohio, Grand & McClurg, Chicago, Illinois (Lindsay Light II /TRS Property/341 East Ohio, Chicago, Illinois)

Dear Mr. Hinds:

On Friday, December 17, 2004, we discussed with you and your consultant, (Larry Bertsch, and John Yang, GaiaTech), remaining radiological contamination in the "wedge" at 345 East Ohio and at Ohio, Grand, and McClurg (OGM) <sup>1</sup>. The wedge is the area 5 feet from the sidewalk and is identified as the Radiological Area of Concern (RAC) in your Soil Management Plan dated November 10, 2004.

U.S. EPA agreed that the entire wedge warrants investigation, however, it can be done in stages. The wedge on your immediate development at 345 East Ohio should be investigated first and then filter fabric placed on the OGM portion until it is developed. We did not discuss the wedge investigation in detail, but we would expect it to extend to the depth of natural sand and radiological monitoring of the soil as you remove it with the bucket. We agreed that filter fabric should be installed on the OGM portion since it will help distinguish the wedge from the "clean" spoils removed from 345 East Ohio and placed on the OMG portion, and the additional soil brought in to bring the OGM to grade. In addition, the exact location of the filter fabric should be documented on a map/drawing so when development occurs this knowledge can be utilized. For example, during our meeting you explained that the owner/developer of the site planned to transfer to the City of Chicago approximately 25 feet on the eastern part of OGM to accommodate the expansion of McClurg Court. Therefore, we would expect that prior to the expansion the overburden would be removed and then the material under the filter fabric would be accessible for radiological screening before construction of McClurg Court.

<sup>&</sup>lt;sup>1</sup>341 East Ohio has been divided into two portions: west portion of 341 East Ohio is now called 345 East Ohio and is under development, and the east portion is called OGM and will be developed at later date.

Keep in mind, that given the long-lived nature of thorium contamination, if Golub decides to leave any radiological contamination at the property or does not conduct an investigation capable of identifying any existing contamination, long-term institutional controls to prevent a release to the public or the environment may be necessary.

If you have any questions regarding this correspondence, please contact me at (312) 886-3601 or Larry Jensen, Health Physicist, at (312) 886-5026. Please direct any legal questions to Mary Fulghum, Associate Regional Counsel, at (312) 886-4693 or Cathleen Martwick, Associate Regional Counsel at (312) 886-7166.

Sincerely,

Verneta Simon

On-Scene Coordinator \*

cc: Larry Bertsch and John Yang, GaiaTech 200 North LaSalle Street, Suite 2600

Chicago, Illinois 60601

Rhamat Begum, Chicago Department of Environment

Benet Haller, Chicago Department of Planning and Development



# EMERGENCY RESPONSE BRANCH

REGION 5, CHICAGO, ILLINOIS FAX NUMBER; 312-353-9176

TO: Larry Bertson/John Yang
FROM: VERNETA Simon
DATE: 1/12/05
PHONE NUMBER (312)541-0340
TOTAL NUMBER OF PAGES (INCLUDING COVER)
COMMENTS: 345 GONIO/ OGM

Appendix C

**City of Chicago Permits** 



City of Chicago Richard M. Duley, Mayor

Department of Environment

Twenty-tifth Floor
30 North LaSalle Street
(hicago, 11linois 60602-2575
(312) 744-7606 (Voice)
(312) 744-6451 (FAX)
(312) 744-3586 (TTY)

http://www.cityofchicago.org

FEUNDA JUN Permit No. 204190

20419022

8-5-7

Site Address 345 E. alto Street

Work Location (describe exact site location)

Row Row

Nature of Work

Constantion of New



# CITY OF CHICAGO DEPARTMENT OF ENVIRONMENT FORM NO. DOE.ROW.01

Notice is hereby given that the site you have requested information on is recorded with the City of Chicago Department of Environment as potentially having environmental contamination on the site and adjacent right-of way. This environmental contamination could present a direct to human health and safety in connection with work performed at the site, or in the adjacent right-of-way, if proper safeguards are not employed.

A file containing detailed information regarding the aforementioned environmental contamination is available for review at the Department of Environment at 30 N. LaSalle St., 25th Floor, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday). Contact Rhamat Begum at (312) 744-3152 for an appointment. This file must be reviewed and the remainder of this form completed before the permit can be issued. Please note that for some locations, additional health and safety procedures may be required by law.

Please complete the following:

I have reviewed and understand the documents, maintained by the Department of Environment, regarding environmental contamination of the site and adjacent right-of-way. Further, I will ensure that all work at the subject site and adjacent right-of-way, and any monitoring required including but not limited to radiation monitoring, will be performed in a manner that is protective of human health and the environment and in compliance with all applicable local, state, and federal laws, rules, and regulations, especially those pertaining to worker safety and waste management. I will ensure that the results of any radiation monitoring and/or surveying conducted shall be provided to the Department of Environment within two (2) weeks of their completion. If any elevated levels of radioactive material are detected, I will immediately contact the United States Environmental Protection Agency at (800) 424-8802.

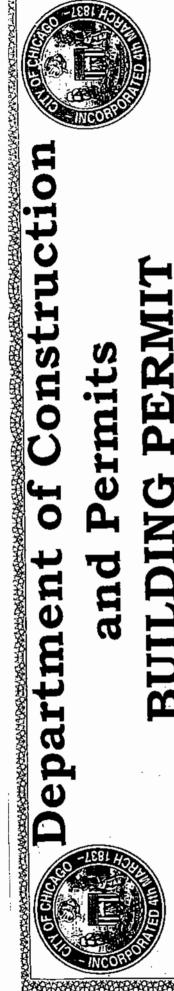
Signature
Name (print) LEE LOOLUB
Company 40 LUB OGA WVESTORS, UC C/O GO WAR COMPANY
Address 625 N MCCAIGAN AVENUE STE 2000
Phone No. 312 - 440 - 8800
Prime Contractor/Contact WALSH CONSTRUCTION / RORY THINGH Address 929 W ADAMS STREET
Phone 312 - 907 - 1537.
Safety Officer/Phone Steve Kling 312-541-4700x226 (Gaiatech) Radiation Contractor/ Phone (if applicable) STS/Stephen Torres, 847-279-2474 Since the Boston STS
Signed by Department of Environment Tahmatunse Begun
Datc1//22/04/

Please return this completed form to the City of Chicago Department of Transportation at 30 N. LaSalle St., Room 1101, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday).

10 bu

Revised Mar. 13, 2002





# epartment of Construction BUILDING PERMIT and Permits



Permit No. 1047531

Issued 11/29/2004

345-345 E OHIO ST For Work at:

Description of permitted work:

NEW 49 STORY PARKING AND RESIDENTIAL FACILITY - FOUNDATION ONLY.

In an Emergency Contact: LEE GOLUB

(312)440-8701

Richard M. Daley

Owner: GOLUB OGM INVESTORS, LLC 525 N MICHIGAN AVE CHICAGO, IL 60611 (312) 440-8800

WALSH CONSTRUCTION COMPANY CHICAGO, IL 60607 (312) 563-5400 929 W ADAMS ST Contractor

Rafael Hernandez Executive Director

> Original Permit must be displayed on job site at all times; Copies NOT allowed! Plans must be kept on site during construction. Permit is NOT transferable. Any changes in contractor or deviation from approved plans inust be approved by the Department of Construction and Permits. Permit may be revoked for violation of any of the above provisions or other applicable ordinance

A Certificate of Occupancy may be required before occupancy. Call (312) 744-2529 for more information.

THIS DOCUMENT HAS BLACK PRINTING OVER A BLUE AND PINK RAINBOW BACKGROUND ON WHITE PAPER.

Domit #



Richard M. Daley, Mayor Miguel d'Escoto, Cammissioner

# CITY OF CHICAGO

Department of Transportation 121 N. La Salle Street, Room 905 Chicago, IL 60602

Tel: 312-744-4652 Fax: 312-744-4627

Counter Fax: 312-744-6789

# MOVING barrical

# APPLICATION FOR A PERMIT TO OCCUPY THE PUBLIC RIGHT-OF-WAY

Date Submitted:					
Applicant Information: Permit issued to: Thermal Remediation Inc. FEIN: 36-4/48657					
Address: 956 S. Bartlett Rd. #250					
D + 10+1 T/ 2000 60/03	relephone: 630 8	309323			
Job Representative or Applicant: John Sweev y - TR	312-54	Bertsch Constant			
Job Representative or Applicant:	1	674			
Building Owner: Golub & Company 625 Nr. michigan, chicago, I	Telephone: <u>**</u>	2 44 087 BB			
		. , .			
Permit requested for the period of: 12/14/04 to					
Address or route: 345 E. Ohio Street, Chicag	o IL 606	5 <i>//</i>			
344 E. (Trand Ave. Chicaa	o IL 606	611 .			
Activity Type: Public Place Obstruction (Daily or Annual)	and the board	partial side - MIL			
☐ Type I (Alteration, repair facade, demolition) ☐ Type II (New Construction)	clusure o	<b>P.1.</b>			
Application for (please check all that apply):  L BARRICADE: Partial Closure L Full Closure L CANO	PY: I. Heavy L	Light 17 Rolling			
Location Footage	Start Date	End Date			
Sidewalk L Barricade ft L Canopyft	12/14/04	12/22/04			
Parkway L Barricadeft L Canopyft		1/5/05			
Curb Lane L Barricadeft L Canopyft					
Alley ∟ Barricadeft ∟ Canopyft					
Traffic L Barricadeft L Canopyft					
Bike Lane   Barricadeft					
		·			
L. DRIVEWAY-TEMPORARY:					
What is the duration of the driveway opening?	·-··				
What is the width of the driveway? (ft.) Number	of driveways:				

Miguel d'Escoto, Commissioner

, RAGE

CDOT

CITY OF CHICAGO
Department of Transportation

Department of Transportation 121 N. La Salle Street, Room 905 Chicago, IL 60602

Tel: 312-744-4652 Fax: 312-744-4627 Counter Fax: 312-744-6789 NOVINS POUR ICCO

# APPLICATION FOR A PERMIT TO OCCUPY THE PUBLIC RIGHT-OF-WAY

	Date	e Submitted:		/	Permit #: _		
Applicant Information: Permit issued to: Thermal Remediation Inc. FEIN: 36-4148657							
Address: 956 S. Bartlett Rd. #250							
}	City: Bartlett State: IL Zip code: 60/03 Telephone: 630 830 9323  Job Representative or Applicant: John Swany - TRT Larry Beetsch, Galatca						
Job F	Repreșentativ	e or Applicant: _	John !	Swaan y	TR]	Lacry	Beetsch, Guidte
Build	ling Owner. ೯೭೯	60 lul	s & C	om pary	-90 / I	Telephone:	440876
						1212	
Add	ress or route	345 E	Ohio 3	Street.	Chicad	0 IL 606	61/
		344 F	Trand 1	Ave.	Chicag	o IL 60	611
Ac	tîvity Type:	Y Public Plac	e Obstruction	(Daily or Ani	nual) —	excupator	adjacint to purtial side
			eration, repai ew Construct	rfacade, dem tion)	nolition)	closure	- partine side
L		∟ Type III (M			ning)		
Ap	plication fo	r (please chec	k all that app	oly):	CANO	IDV. I Heavy I	Light 🗆 Rolling
		DE: X Pattart			L CANO		
	Location		Foota	ge	· · · · · ·	Start Date	End Date
	Sidewalk	L. Barricade	ft.	∟ Canopy	ft	12/14/04	12/22/04
	Parkway	∟ Barricade	ft	∟ Canopy	ft		1/5/05/
	Curb Lane	L Barricade	ft	L Canopy	ft		<u> </u>
	Alley	∟ Barricade	ft	L. Canopy	ft		
	Traffic	L Barricade	ft	L Canopy	ft		
	Bike Lane	∟ Barricade	ft	∟ Canopy	ft		
L	L DRIVEWAY-TEMPORARY: What is the duration of the driveway opening?						
	What is the width of the driveway? (ft.) Number of driveways:						
	,				() [		
L							

# Permit # 502478109

Received Date: Jan 24, 2005 12:57:46

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607 TO CHICAGO IN THE PARTY OF THE

City of Chicago Department of Transportation (312) 744-4652

MARK KRYHOWSKI 312-563-5400

# **ACTIVITY HOURS**

Permitted activity hours begin at 9;30AM. Permitted activity hours will end at 4:00PM. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 340 - 340 E GRAND AV Sidewalk Opening

Permitted activity hours begin at 9;30AM. Permitted activity hours will end at 4:00PM. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 340 - 340 E GRAND AV Street Opening (Curb Lane & Traffic Lane)

# **DATES**

Jan 24, 2005 through Feb 11, 2005

# **ACTIVITIES**

# Sidewalk Opening:

A sidewalk opening is being made to SOIL REMEDIATION. There are 1 location(s) that will affect 50 sidewalk slab(s).

The opening is 200 ft X 7 ft.

340 E GRAND AV

PERMIT RELEASE OK'D PER R BEGUM,(M SIMON) AUGUST 5,2004.

Street Opening (Curb Lane & Traffic Lane):

Dig #: 502420615

Dig #: 502420590

# Restrictions:

- Maintain a minimum of feet for pedestrian traffic.
- 2. A copy of the permit must remain on-site for inspector's review.
- 3. Pedestrian walkway must be kept free of all obstructions and debris.
- 4. Adequate provisions must be made to prohibit the falling of any debris or materials and to provide overhead cover.
- 5. Sight clearance of all traffic signals and regulatory signs must be maintained at all times.
- Maintain fire hydrant and manhole access.
- 7. Crosswalk obstruction prohibited.
- 8. Barricades and detour signs provided by permittee.
- 9. Must remain free of advertisements and graffiti.
- 10. "NO PARKING SIGN POSTING" requests must be entered on the permit if needed to perform the work. If a Service Request control number is listed on the permit and no signs were posted, call 312-747-5085. All other changes or request for re-posting must be referred to Construction Compliance.
- 11. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.

ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	800.00	100-84-2030-2590	
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	800.00	100-84-2030-2590	
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,000.00	100-84-2030-2590	
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,000.00	100-84-2030-2590	

# Restrictions:

- 17. Restore all lanes to normal operation during non-working hours.
- 18. Must use flagmen and/or arrow boards to maintain traffic operations through the work zone.
- Permanent base pavement restoration to follow within 5 days after the completion of underground work.
- 20. All street openings must be restored with concrete base to grade.
- 21. Work to be performed as per plans and specifications.
- 22. Streets recently resurfaced must be restored to proper standards (resurface to nearest 1/4 pt, see CDOT Construction Standards for further details).

ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement \$ Opening		\$ 195.00	300-84-2030-2561	
Sidewalk Opening	Fee Pavement Opening	\$	195.00	300-84-2030-2562	
	Total Fees:		390.00		

Affected CUAN Sites: 7, 15, 18, 21, 22, 24, 29, 31, 34, 38, 53, 83, 109, 111, 141, 147

# **EFFECTIVE DATES OF PERMIT**

Grand Total Fees: \$

390.00

Current: Jan 24, 2005 through Feb 11, 2005 (Input date: Jan 24, 2005 12:57:47 p.m.)

# END OF PERMIT

WALSH CONSTRUCTION CO Permit # 502478109 Counter Page #: 3

# Permit # 502478161

Received Date: Jan 24, 2005 1:5:17

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607



City of Chicago Department of Transportation (312) 744-4652

MARK KRYGOWSKI 312-222-1471

# **ACTIVITY HOURS**

# See RESTRICTIONS for permitted hours

# **DATES**

Jan 24, 2005 through Feb 11, 2005

# **ACTIVITIES**

# Barricade/Walkway - Const (Sidewalk or Parkway):

Placement of a 200 foot barricade for New Construction. The barricade will cause a Total Closure on the parkway or sidewalk.

NA Will be stored in the barricaded work site.

340 E GRAND AV

CLOSE SIDEWALK AND REDIRECT PEDESTRIANS TO CURB LANE. OK PER MDS.

# Barricade/Walkway - Const (Curb Lane):

Placement of a 200 foot barricade for New Construction.

NA Will be stored in the barricaded work site.

340 - 340 E GRAND AV

### Restrictions:

# Street Opening (Curb Lane & Traffic Lane):

There will be 1 opening(s) in the public way for the purpose: REMEDIATION TESTING. 40 Feet x 5 Feet

340 E GRAND AV

NO ASPHALT FEES .
PERIMETER PAVING AGREEMENT.

# Restrictions:

- 1. Permitted Hours: 9:30 AM to 4:00PM.
- 2. All directional boring must be pre-approved by the Office of Underground Coordination.
- 3. Contractor must secure plating over all openings in the roadway during non-working hours until such time when the road surface is restored.
- 4. Use of pneumatic equipment must not begin before 8 A.M. or continue after 9 P.M.
- 5. Contractor must notify DIGGER at 312-744-7000 no less then 48 hours (exclusive of Saturdays, Sundays and Holidays) but no more then 14 calendar days in advance of the start of the excavation or demolition, unless the excavation date was provided with the application and remains unchanged. Prior to 26 calendar days the Contaractor must notify DIGGER to renewal the dig date!
- 6. It is the Excavator's responsibility to request refreshing of marks when needed, but no longer than 28 calendar days after the last requested date.
- 7. When applicable, all excavation areas are to be clearly marked in safety white paint prior to calling DIGGER. White paint is not required for joint meets or emergency work.
- 8. Excavators requesting dig tickets are responsible for the protection of utility markings at the job site. Any markings of underground utilities utilizing utility colors, must be done by facility owners or authorized agents only.
- 9. Permittee must provide a sign which identifies the telephone number and company or person performing the work. Signage may be affixed to barricades.
- 10. Maintain pedestrian traffic at all times.
- 11. A copy of the permit must remain on-site for inspector's review.
- 12. Restoration to follow immediately upon completion of underground work. Weather permitting. (If excavating)
- 13. All pavements are to be restored in accordance with CDOT Construction Standards.
- 14. WARNING: THIS WORKSITE(S) CONTAINS RADIOACTIVE MATERIAL. ANY QUESTIONS PERTAINING TO HANDLING OF MATERIALS, CONTACT THE DEPT. OF ENVIRONMENT AT 312-744-3152.
- 15. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
- All traffic control will be the responsibility of the contractor and must comply with all MUTCD standards.

Counter Page #:

2

Dig #: 502420615

5,600.00 Grand Total Fees: \$

# EFFECTIVE DATES OF PERMIT

Current: Jan 24, 2005 through Feb 11, 2005 (Input date: Jan 24, 2005 1:05:18 p.m.)

# **END OF PERMIT**

WALSH CONSTRUCTION CO

Permit # 502478161

Counter

Page #: 3

ERIC HINDS 312-440-8800



City of Chicago Department of Transportation (312) 744-4652

# **ACTIVITY HOURS**

# See RESTRICTIONS for permitted hours **DATES**

Jan 24, 2005 through Feb 11, 2005

# **ACTIVITIES**

# Parking Meter - Removed:

4 Parking meter(s) are to be removed. The following parking meters will be removed for 1 month(s): 212.

The Department of Revenue has been provided the following special instructions: NONE.

The corresponding Service Request number is 05-00098703.

340 E GRAND AV

PARKING METERS TO BE REMOVE ARE 212037, 212038, 212039 212040.

Parking Meter/Pay Box Lost Revenue Surcharge:

340 - 340 E GRAND AV

# Parking Restriction Posting/Meter Bagging:

A Parking Restriction Sign Posting is required for NEW CONSTRUCTION. Special Instructions are POSTING IS DONE UNDER PREVIOUS PERMIT.

The corresponding Service Request number is 05-00098704.

340 - 340 E GRAND AV

#### Restrictions:

- 1. Work estimated to be completed FEB 11TH, 2005
- 2. All removal and replacements of parking meters must be performed by City of Chicago forces.
- 3. Contractor is to notify this office upon request for replacement of meters.
- 4. A copy of the permit must remain on-site for inspector's review.
- 5. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
- 6. "NO PARKING SIGN POSTING" requests must be entered on the permit if needed to perform the work. If a Service Request control number is listed on the permit and no signs were posted, call 312-747-5085. All other changes or request for re-posting must be referred to Construction Compliance.
- 7. All signs must be removed by the contractor when job is complete.
- 8. Applicant must contact Construction Compliance for any changes that affect the date(s), time(s) or location(s) for Meter Bagging and/or Parking Restriction Sign Posting.
- 9. Any questions regarding the actual placement of signs or meter bagging, contact the Bureau of Traffic Services at (312) 747-5085.

ACTIVITY	TRANSACTION	AM	IOUNT	CAPS
Parking Meter - Removed	Fee for Activity	\$	600.00	100-29-3157-4301
Parking Meter/Pay Box Lost Revenue Surcharge	Surcharge for lost revenue from parking meters	\$	490.08	100-29-3157-4902

Total Fees: \$ 1,090.08

Grand Total Fees: \$

1,090.08

## **EFFECTIVE DATES OF PERMIT**

Current: Jan 24, 2005 through Feb 11, 2005 (Input date: Jan 20, 2005 9:46:40 a.m.)



## **END OF PERMIT**

City of Chicago

Department of Revenue

121 N. LaSalle R∎802

103 01/24/05 12:49 Batch 07280 WalkIn n ch-ru80202

CDOT Permit

5119921953 \$1,090.08 Permit # 502068693

CDOT Permit

5119922456

\$300.00

Permit # 502068782

Business Check \$1,390.08

Total Amount Paid \$1,390.08

Thank you

Received Date: Jan 20, 2005 10:0:18

GOLUB OGM INVESTORS LLC 625 N. MICHIGAN AV. CHICAGO, IL 60611

ERIC HINDS 312-440-8800



City of Chicago Department of Transportation (312) 744-4652

## ACTIVITY HOURS

# See RESTRICTIONS for permitted hours DATES

Jan 24, 2005 through Feb 14, 2005

## **ACTIVITIES**

# Sign Removal:

The Bureau of Signs and Markings will remove 2 sign(s) by JAN 24, 2005.

The sign(s) to be removed are: NO PARKING SIGNS.

The corresponding Service Request number is 05-00098773.

340 - 340 E GRAND AV

#### Restrictions:

- 1. Work estimated to be completed FEB 14TH, 2005
- 2. All removal and replacements of signs must be performed by City of Chicago forces.
- 3. Contractor is to notify this office upon request for replacement of signs.
- 4. A copy of the permit must remain on-site for inspector's review.
- Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in 5. the immediate cancellation of the permit. Monthly billing accounts are not applicable.

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ACTIVITY TRANSACTION AMOUNT CAPS
Sign Removal Fee for Activity \$ 300.00 100-84-2030-4901

Total Fees: \$ 300.00

Grand Total Fees: \$ 300.00

# **EFFECTIVE DATES OF PERMIT**

Current: Jan 24, 2005 through Feb 14, 2005 (Input date: Jan 20, 2005 10:00:18 a.m.)

# **END OF PERMIT**



**GOLUB OGM INVESTORS LLC** 

# Permit # 436562448

Received Date: Dec 30, 2004 9:18:25

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607

M SHEERAN 312-563-5400



City of Chicago Department of Transportation (312) 744-4652

## **ACTIVITY HOURS**

See RESTRICTIONS for permitted hours

## **DATES**

Jan 3, 2005 through Feb 1, 2005

## **ACTIVITIES**

# Barricade/Walkway - Const (Sidewalk or Parkway):

Placement of a 210 foot barricade for New Construction. The barricade will cause a Total Closure on the parkway or sidewalk.

NA Will be stored in the barricaded work site.

345 E OHIO ST

BLDG PERMIT # 2004-1047531. OK PER MDS.

# Barricade/Walkway - Const (Curb Lane):

Placement of a 210 foot barricade for New Construction.

NA Will be stored in the barricaded work site.

345 - 345 E OHIO ST

# Temporary Driveway:

## Temporary Driveway:

4 Driveway(s) with a total size of 25 Ft. will be open 1 Month(s).

345 E OHIO ST

PERMITTEE TO PLACE: 2 TEMP DRIVEWAYS ON OHIO 2 TEMP DRIVEWAYS ON GRAND

344 - 344 E GRAND AV

### Restrictions:

- I. Maintain a minimum of 0 feet for pedestrian traffic.
- 2. A copy of the permit must remain on-site for inspector's review.
- 3. Pedestrian walkway must be kept free of all obstructions and debris.
- 4. Adequate provisions must be made to prohibit the falling of any debris or materials and to provide overhead cover.
- 5. Sight clearance of all traffic signals and regulatory signs must be maintained at all times.
- Maintain fire hydrant and manhole access.
- 7. Crosswalk obstruction prohibited.
- 8. Barricades and detour signs provided by permittee.
- Must remain free of advertisements and graffiti.
- 10. "NO PARKING SIGN POSTING" requests must be entered on the permit if needed to perform the work. If a Service Request control number is listed on the permit and no signs were posted, call 312-747-5085. All other changes or request for re-posting must be referred to Construction Compliance.
- 11. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
- 12. Protective decking must be provided to protect curb and sidewalk surface.
- 13. Temporary driveway must be planked with 2X10's and sheated with plywood.

Page #:

ACTIVITY	TRANSACTION	A	MOUNT	CAPS
Temporary Driveway	Fee for Activity	\$	400.00	100-84-2030-2519
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	840.00	100-84-2030-2590
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	840.00	100-84-2030-2590
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,100.00	100-84-2030-2590
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,100.00	100-84-2030-2590
	Total Foor	. e	6 280 00	

Total Fees: \$ 6,280.00

Grand Total Fees: \$ 6,280.00

# EFFECTIVE DATES OF PERMIT

Current: Jan 03, 2005 through Feb 01, 2005 (Input date: Dec 30, 2004 9:19:13 a.m.) Previous: Jan 03, 2005 through Feb 02, 2005 (Input date: Dec 30, 2004 9:18:24 a.m.)

# **END OF PERMIT**

City of Chicago

Rafael Maciel Senior Environmental Inspector

Department of Environment Permitting and Enforcement Suite 2500 30 North LaSalle Street Chicago, Illinois 60602

312 744-5272 (FAX) 312 744-3586 (FTY) 312 689-7082 (Pager) rmaciel@cityofchicago.org

312 744-7237

Received Date: Jan 7, 2005 1:13:58

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607 CHICAGO CHICAG

City of Chicago Department of Transportation (312) 744-4652

M. SHEERAN 312-563-5400

## **ACTIVITY HOURS**

Permitted activity hours begin at 9:30 A.M. Permitted activity hours will end at 4:00 P.M. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 345-345 E OHIO ST Street Opening (Curb Lane & Traffic Lane)

## **DATES**

Jan 12, 2005 through Jan 26, 2005

## **ACTIVITIES**

# Street Opening (Curb Lane & Traffic Lane):

There will be 2 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 25 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

There will be 2 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 35 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

There will be 1 opening(s) in the public way for the purpose: REMEDIATION -

Dig #: TBD

Dig #: TBD

Dig #: TBD

B

10.100 / No. 16.100 14.865 | 1. ch m80002 5118389152

Counter Page #:

5118389152

# Street Opening (Curb Lane & Traffic Lane):

Dig #: TBD

TESTING. 5 Feet x 5 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

Dig #: TBD

There will be 1 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 30 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

Dig #: TBD

There will be 1 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 27 Feet

345 - 345 E OHIO ST

### Restrictions:

- 1. Permitted Hours: 9:30 AM to 4:00 PM (days)
- 2. All directional boring must be pre-approved by the Office of Underground Coordination.
- 3. Contractor must secure plating over all openings in the roadway during non-working hours until such time when the road surface is restored.
- 4. All traffic control will be the responsibility of the contractor and must comply with all MUTCD standards.
- 5. Restore all lanes to normal operation during non-working hours.
- Must use flagmen and/or arrow boards to maintain traffic operations through the work zone.
- 7. Contractor must notify DIGGER at 312-744-7000 no less then 48 hours (exclusive of Saturdays, Sundays and Holidays) but no more then 14 calendar days in advance of the start of the excavation or demolition, unless the excavation date was provided with the application and remains unchanged. Prior to 26 calendar days the Contaractor must notify DIGGER to renewal the dig date!
- 8. It is the Excavator's responsibility to request refreshing of marks when needed, but no longer than 28 calendar days after the last requested date.
- 9. When applicable, all excavation areas are to be clearly marked in safety white paint prior to calling DIGGER. White paint is not required for joint meets or emergency work.
- 10. Excavators requesting dig tickets are responsible for the protection of utility markings at the job

WALSH CONSTRUCTION CO

#### Restrictions:

- site. Any markings of underground utilities utilizing utility colors, must be done by facility owners or authorized agents only.
- 11. Use of pneumatic equipment must not begin before 8 A.M. or continue after 9 P.M.
- 12. Permittee must provide a sign which identifies the telephone number and company or person performing the work. Signage may be affixed to barricades.
- 13. A copy of the permit must remain on-site for inspector's review.
- 14. Permanent base pavement restoration to follow within 5 days after the completion of underground work.
- 15. All pavements are to be restored in accordance with CDOT Construction Standards.
- 16. Work to be performed as per plans and specifications.
- 17. Streets recently resurfaced must be restored to proper standards (resurface to nearest 1/4 pt, see CDOT Construction Standards for further details).
- 18. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.

ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	390.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	390.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	

Total Fees: \$ 1,365.00

Grand Total Fees: \$ 1,365.00

WALSH CONSTRUCTION CO Permit # 500787645 Counter Page #: 3

# EFFECTIVE DATES OF PERMIT

Current: Jan 12, 2005 through Jan 26, 2005 (Input date: Jan 07, 2005 1:13:58 p.m.)

## **END OF PERMIT**

Page #:

City of Chicago

Department of Revenue

121 N. LaSalle Rm802

85 01/10/05 14:45 Batch 14382 WalkIn n ch-rm80202

CDOT Permit 5118389152 Permit # 500787645 Business Check \$1,365.00

\$1,365.00

Total Amount Paid \$1,365.00

Thank you

# Permit # 500580077

Received Date: Jan 5, 2005 3:29:23

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607



City of Chicago Department of Transportation (312) 744-4652

MICHAEL SHERMAN 312-563-5400

## **ACTIVITY HOURS**

Permitted activity hours begin at 800AM. Permitted activity hours will end at 9:00PM. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 345 - 345 E OHIO ST Sidewalk Opening

## **DATES**

Jan 5, 2005 through Feb 3, 2005

## **ACTIVITIES**

# Sidewalk Opening:

A sidewalk opening is being made to SOIL REMEDIATION. There are 1 location(s) that will affect 50 sidewalk slab(s).

The opening is 210 ft X 12 ft.

345 E OHIO ST

PERMIT RELEASE OK'D PER R BEGUM, AUGUST 5,2004. OK PER MDS.

## Restrictions:

- 1. Permitted Hours: 8:00AM TO 9:00PM.
- 2. All directional boring must be pre-approved by the Office of Underground Coordination.
- Contractor must secure plating over all openings in the roadway during non-working hours until such time when the road surface is restored.

WALSH CONSTRUCTION CO

Permit # 500580077

Counter

Page #:

Dig #: 500531391

# EFFECTIVE DATES OF PERMIT

Current: Jan 05, 2005 through Feb 03, 2005 (Input date: Jan 05, 2005 3:29:23 p.m.)

## **END OF PERMIT**

Counter

Page #: 3

M SHEERAN 312-563-5400



City of Chicago Department of Transportation (312) 744-4652

## **ACTIVITY HOURS**

See RESTRICTIONS for permitted hours

## **DATES**

Jan 3, 2005 through Apr 1, 2005

## **ACTIVITIES**

# Barricade/Walkway - Const (Sidewalk or Parkway):

Placement of a 210 foot barricade for New Construction. The barricade will cause a Total Closure on the parkway or sidewalk.

NA Will be stored in the barricaded work site.

345 E OHIO ST

BLDG PERMIT # 2004-1047531. OK PER MDS.

AMENDED PERMIT THRU APRIL 1,2005. OK PER MDS.

# Barricade/Walkway - Const (Curb Lane):

Placement of a 210 foot barricade for New Construction.

NA Will be stored in the barricaded work site.

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# Barricade/Walkway - Const (Curb Lane):

345 - 345 E OHIO ST

# Temporary Driveway:

4 Driveway(s) with a total size of 25 Ft, will be open 3 Month(s).

345 E OHIO ST

PERMITTEE TO PLACE: 2 TEMP DRIVEWAYS ON OHIO 2 TEMP DRIVEWAYS ON GRAND

344 - 344 E GRAND AV

#### Restrictions:

- 1. Maintain a minimum of 0 feet for pedestrian traffic.
- 2. A copy of the permit must remain on-site for inspector's review.
- 3. Pedestrian walkway must be kept free of all obstructions and debris.
- 4. Adequate provisions must be made to prohibit the falling of any debris or materials and to provide overhead cover.
- 5. Sight clearance of all traffic signals and regulatory signs must be maintained at all times.
- 6. Maintain fire hydrant and manhole access.
- 7. Crosswalk obstruction prohibited.
- 8. Barricades and detour signs provided by permittee.
- 9. Must remain free of advertisements and graffiti.
- 10. "NO PARKING SIGN POSTING" requests must be entered on the permit if needed to perform the work. If a Service Request control number is listed on the permit and no signs were posted, call 312-747-5085. All other changes or request for re-posting must be referred to Construction Compliance.
- 11. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.
- 12. Protective decking must be provided to protect curb and sidewalk surface.
- 13. Temporary driveway must be planked with 2X10's and sheated with plywood.

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ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Temporary Driveway	Fee for Activity	\$	400.00	100-84-2030-2519	
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	840.00	100-84-2030-2590	
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	840.00	100-84-2030-2590	
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,100.00	100-84-2030-2590	
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	2,100.00	100-84-2030-2590	

6,280.00 Total Fees: \$

# Adjustments since last print:

ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Temporary Driveway	Fee Change for Activity	\$	800.00	100-84-2030-2519	
Barricade/Walkway - Const (Curb Lane)	Fee for Activity	\$	8,400.00	100-84-2030-2590	
Barricade/Walkway - Const (Sidewalk or Parkway)	Fee for Activity	\$	3,360.00	100-84-2030-2590	

12,560.00 Total Fees: \$

**Grand Total Fees: \$** 18,840.00

# EFFECTIVE DATES OF PERMIT

Current: Jan 03, 2005 through Apr 01, 2005 (Input date: Jan 19, Previous: Jan 03, 2005 through Feb 01, 2005 (Input date: Dec 30 Previous: Jan 03, 2005 through Feb 02, 2005 (Input date: Dec 3

City of Chicago

Department of Revenue

121 N. LaSalle Rm802

## END OF PERMIT

104 01/24/05 12:50 Batch 07280 WalkIn n ch-rus80202

CDOT Permit 5115134746 Permit # 436562448

\$12,560.00

Business Check

\$12,560.00

WALSH CONSTRUCTION CO

Permit # 436562448

Total Amount Paid

\$12,560.00

Thank you

5115134746

## Permit # 500787645

## **AMENDED**

Received Date: Jan 7, 2005 1:13:58

WALSH CONSTRUCTION CO 929 WEST ADAMS CHICAGO, IL 60607

M. SHEERAN 312-563-5400



City of Chicago Department of Transportation (312) 744-4652

## ACTIVITY HOURS

Permitted activity hours begin at 9:30 A.M. Permitted activity hours will end at 4:00 P.M. ANY WORK ON ARTERIAL STREETS MUST ADHERE TO ALL RUSH HOUR RESTRICTIONS. 345-345 E OHIO ST Street Opening (Curb Lane & Traffic Lane)

## DATES

Jan 12, 2005 through Jan 31, 2005

## ACTIVITIES

# Street Opening (Curb Lane & Traffic Lane):

There will be 2 opening(s) in the public way for the purpose: REMEDIATION -TESTING. 5 Feet x 25 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

There will be 2 opening(s) in the public way for the purpose: REMEDIATION -TESTING. 5 Feet x 35 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

There will be 1 opening(s) in the public way for the purpose: REMEDIATION -

WALSH CONSTRUCTION CO

Permit # 500787645

Counter

Page #: 1

Dig #: 501038699

Dig #: 501038714

Dig #: 501038726

# Street Opening (Curb Lane & Traffic Lane):

Dig #: 501038726

TESTING. 5 Feet x 5 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

Dig #: 501038738

There will be 1 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 30 Feet

345 - 345 E OHIO ST

# Street Opening (Curb Lane & Traffic Lane):

Dig #: 501038740

There will be 1 opening(s) in the public way for the purpose: REMEDIATION - TESTING. 5 Feet x 27 Feet

345 - 345 E OHIO ST

### Restrictions:

- 1. Permitted Hours: 9:30 AM to 4:00 PM (days)
- 2. All directional boring must be pre-approved by the Office of Underground Coordination.
- 3. Contractor must secure plating over all openings in the roadway during non-working hours until such time when the road surface is restored.
- 4. All traffic control will be the responsibility of the contractor and must comply with all MUTCD standards.
- 5. Restore all lanes to normal operation during non-working hours.
- 6. Must use flagmen and/or arrow boards to maintain traffic operations through the work zone.
- 7. Contractor must notify DIGGER at 312-744-7000 no less then 48 hours (exclusive of Saturdays, Sundays and Holidays) but no more then 14 calendar days in advance of the start of the excavation or demolition, unless the excavation date was provided with the application and remains unchanged. Prior to 26 calendar days the Contaractor must notify DIGGER to renewal the dig date!
- 8. It is the Excavator's responsibility to request refreshing of marks when needed, but no longer than 28 calendar days after the last requested date.
- 9. When applicable, all excavation areas are to be clearly marked in safety white paint prior to calling DIGGER. White paint is not required for joint meets or emergency work.
- 10. Excavators requesting dig tickets are responsible for the protection of utility markings at the job

WALSH CONSTRUCTION CO

Permit # 500787645

Counter

Page #:

### Restrictions:

- site. Any markings of underground utilities utilizing utility colors, must be done by facility owners or authorized agents only.
- 11. Use of pneumatic equipment must not begin before 8 A.M. or continue after 9 P.M.
- 12. Permittee must provide a sign which identifies the telephone number and company or person performing the work. Signage may be affixed to barricades.
- 13. A copy of the permit must remain on-site for inspector's review.
- 14. Permanent base pavement restoration to follow within 5 days after the completion of underground work.
- 15. All pavements are to be restored in accordance with CDOT Construction Standards.
- 16. Work to be performed as per plans and specifications.
- 17. Streets recently resurfaced must be restored to proper standards (resurface to nearest 1/4 pt, see CDOT Construction Standards for further details).
- 18. Permit fees must be paid within 24 hours of the date of issuance. Failure to pay will result in the immediate cancellation of the permit. Monthly billing accounts are not applicable.

ACTIVITY	TRANSACTION	AMOUNT		CAPS	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	390.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	390.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	
Street Opening (Curb Lane &Traffic Lane)	Fee Pavement Opening	\$	195.00	300-84-2030-2561	

Total Fees: \$ 1,365.00

Grand Total Fees: \$ 1,365.00

WALSH CONSTRUCTION CO

Affected CUAN Sites: 7, 15, 18, 21, 22, 24, 29, 31, 34, 38, 53, 83, 109, 111, 141, 147

# **EFFECTIVE DATES OF PERMIT**

Current: Jan 12, 2005 through Jan 31, 2005 (Input date: Jan 25, 2005 4:16:47 p.m.) Previous: Jan 12, 2005 through Jan 26, 2005 (Input date: Jan 07, 2005 1:13:58 p.m.)

## **END OF PERMIT**

645 Counter Page #:

Appendix D

Health and Safety Plan

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## **EMERGENCY PHONE NUMBERS**

IN THE EVENT OF AN EMERGENCY DIAL 911	
AMBULANCE SERVICE	
FIRE DEPARTMENT	. 911
EMERGENCY RESCUE SERVICE	. 911
POLICE DEPARTMENT	. 911
NATIONAL RESPONSE CENTER	1-800-424-8802
POISON CONTROL CENTER	1-800-732-2200
NORTHWESTERN MEMORIAL HOSPITAL	(312) 908-2000
ILLINOIS DEPARTMENT OF NUCLEAR SAFETY	
(IDNS) EMERGENCY NUMBER	` '
PROJECT COORDINATOR (STEVE KLINE, Alternate JOHN YANG)	` '
SITE PROJECT COORDINATOR (LARRY BERTSCH)(CELL 630-730-7905)	
TRI (REMEDIATION CONTRACTOR)(JOHN SWEENY)(CELL	630-830-9323
STS (STEVE TORRES)	.(847) 279-2474
WALSH CONSTRUCTION (GEN. CONSTRUCTION CONTRORY TININEN)	` '
ILLINOIS EMERGENCY MANAGEMENT	· ·
USEPA REGION 5 - 24-HOUR EMERGENCY NUMBER	` /
(VERNETA SIMON EPA PROJ MANAGER -	312-886-3601)

### 1.0 SCOPE OF PLAN

The following Health and Safety Plan (HASP) will be utilized and modified as necessary in order to minimize and prevent exposures to hazardous substances and conditions related to all excavation and remediation activities within the Radiological Area of Concern (RAC) and the Right-of-Way (ROW) of the Phase I area of 341 East Ohio Street, Chicago, Illinois (the Site). No development plan is contemplated for Phase II area of the property at this time and the area will be used for soil staging during the related soil excavation and remediation. Thus, the Site HASP is designated for the areas including the RAC, ROW and soil stage area within the Phase II area during the implementation of the Soil Management Plan. All personnel assigned to this project will be required to review thoroughly the contents of the HASP and to strictly adhere to the policies and procedures listed herein. This HASP is for use only by the Site owner and their designated contractors and consultants, and approved Site visitors. USEPA, and other agencies, are not considered visitors and will be required to conform to their own Health and Safety Plans.

Each area in the ROW where trade people may be subject to any radiation levels will be excavated and thoroughly screened prior to any construction activities. Any levels above the established safe criteria, will be shielded with either plastic sheeting, plywood or concrete in order to obtain a safe working environment. Areas that cannot be safely shielded will be removed and properly disposed of, prior to any construction or trade personnel entering the area.

This plan meets the requirements of OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and applicable subparts of OSHA 29 CFR 1926,1910 and 10 CFR- Visitors will be required to review the health and safety plan and read and sign the visitor information sheet (Figure 1.1).

### 2.0 SAFETY MANAGEMENT

The following safety management structure will be utilized for the implementation, administration, and monitoring of the HASP.

#### 2.1 HEALTH AND SAFETY COORDINATOR

The Health and Safety Coordinator (HSC) shall assume overall responsibility for the HASP. The HSC or designee shall monitor and maintain quality assurance of the HASP until project completion. Principal duties of the HSC include:

- Review project background data,
- Approve all HASP modifications,
- Administer and enforce the HASP,
- Evaluate the adequacy of personal protective equipment (PPE) to be used by Site personnel,
- Conduct required on-site training except tailgate safety meetings that will be conducted by the Field Team Leader,
- Brief visitors on work Site conditions, and
- Administer personnel and ambient air monitoring procedures.

The HSC or designee has the authority to stop work in the event conditions develop which pose an unreasonable risk to Site personnel or persons in the vicinity.

### 3.0 PERSONNEL RESPONSIBILITIES

The HSC or designee will administer and supervise the HASP at the work-site level. He will monitor all operations and will be the primary on-site contact for health and safety issues, and will have full authority to stop operations if conditions are judged to be hazardous to on-site personnel or the public.

The HSC will brief all Site personnel on the contents of the HASP. Personnel will be required to review the HASP, and have the opportunity to ask questions about the planned work or hazards. The Field Team Leader will conduct tailgate safety meetings to familiarize the Site personnel with Site conditions, boundaries, and physical hazards. Site personnel will conduct their assigned tasks in accordance with the HASP at all times.

If at any time Site personnel observe unsafe conditions, faulty equipment or other conditions which could jeopardize personnel health and safety, they are required to immediately report their observations to the HSC or Field Team Leader.

Work zones will be established at the Site. These zones include clean/support zones, decontamination zones, and exclusion zones with markings of "caution" tapes. Exclusion zones will be established as necessary within the RAC and the ROW during subsurface excavation activities. Although the clean/support zones are anticipated to remain fixed, other zones will move about the Site as excavation work progresses.

### 4.0 HAZARD ASSESSMENT

The following represents potential hazards associated with this project.

## 4.1 PRINCIPAL CONTAMINANTS (KNOWN OR SUSPECTED)

• Thorium

• Uranium

• Radium (Rn-220 and Rn-222)

Radon

The contaminants are present in the soil at low concentrations. These primary routes of entry to the body will be considered:

<u>ROUTE</u> <u>ENTRY MADE VIA</u>:

Inhalation Airborne dust containing heavy metal radionuclides.

Ingestion Airborne dust containing heavy metal radionuclides/contaminants

Improper or poor personal hygiene practices.

Eye and Skin Direct contact with contaminants.

Improper or poor personal hygiene practices.

Airborne dust containing heavy metal/radionuclides.

Cuts and abrasions.

Direct Exposure Penetrating gamma radiation in air and soil.

### 4.2 PHYSICAL HAZARDS

Before field activities begin, the HSC will conduct a Site reconnaissance to identify any real or potential hazards created from Site activities. Physical hazards inherent to construction activities and power-operated equipment may exist.

#### 4.2.1 Heat Stress

Field activities in hot weather create a potential for heat stress. The warning symptoms of heat stress include fatigue; loss of strength reduced accuracy, comprehension and retention; and reduced alertness and mental capacity. To prevent heat stress, personnel shall receive adequate water supplies and electrolyte replacement fluids, and maintain scheduled work/rest periods.

The Field Team Leader or designee shall continuously visually monitor personnel to note for signs of heat stress. In addition, field personnel will be instructed to observe for symptoms of heat stress and methods on how to control it. One or more of the following control measures can be used to help control heat stress:

- Provision of adequate liquids to replace lost body fluids. Employees must replace' body fluids lost from sweating. Employees must be encouraged to drink more than the amount required to satisfy thirst, 12 to 16 ounces every half-hour is recommended. Thirst satisfaction is not an accurate indicator of adequate salt and fluid replacement. Replacement fluids can be commercial mixes such as Gatorade.
- Establishment of a work regimen that will provide adequate rest periods for cooling down. This may require additional shifts of workers.
- Breaks should be taken in a cool and shaded rest area (77 degrees is best).
- Employees shall remove impermeable protective garments during rest periods.
- Employees shall not be assigned other tasks during rest periods.
- All employees shall be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress.

#### 4.2.2 Cold Stress

Persons working outdoors in temperatures of 40 degrees and below may suffer from cold exposure. During prolonged outdoor periods with inadequate clothing, effects of cold exposure may even occur at temperatures well above freezing. Cold exposure may cause severe injury by freezing exposed body surfaces (frostbite) or result in profound generalized cooling, possibly causing death. Areas of the body which have high surface area-to-volume ratios such as fingers, toes and ears are the most susceptible to frostbite.

Two factors influence the development of a cold injury: ambient temperature and the velocity of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10' F with a wind of 15 miles per hour (mph) is equivalent inchilling effect to still air at  $-18^{\circ}$ F.

As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus, the body cools suddenly when external chemical-protective equipment is removed if the clothing underneath is perspiration-soaked.

Local injury resulting from cold is included in the generic term "frostbite". There are several degrees of damage. Frostbite of the extremities can be categorized into:

- Frost nip or incipient frostbite: Characterized by sudden blanching or whitening of skin.
- <u>Superficial frostbite</u>: Skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.
- <u>Deep frostbite</u>: Tissues are cold, pale, and solid; extremely serious injury.

<u>Prevention of frostbite is vital.</u> Keep the extremities warm. Wear insulated clothing as part of one's protective gear during extremely cold conditions. Check for symptoms of frostbite at every break. The onset is painless and gradual - you might not know you have been injured until it is too late.

<u>To administer first aid for frostbite</u>, bring the victim indoors and re-warm the areas <u>quickly</u> in water 95° to 100°F. Give individual a warm drink - not coffee, tea, or alcohol. The victim should not smoke. Keep the frozen parts in warm water or covered with warm clothes for 30 minutes, even though the tissue will be very painful as it thaws; then elevate the injured area and protect it from injury. Do not allow blisters to be broken. Use sterile, soft, dry material to cover the injured areas. Keep victim warm and get <u>immediate</u> medical care.

#### 4.2.3 Electrical Hazards

Overhead power lines, downed electrical wires, buried cables and improper use of electrical extension cords can pose a danger of shock or electrocution. All Site personnel should immediately report to the Field Team Leader any condition that could result in a potential electrical hazard.

The Field Team Leader will notify Site personnel during the safety meetings of the locations of known underground cables and utilities.

#### 4.2.4 Noise Hazard

Operation of equipment may present a noise hazard to workers. Site personnel will utilize hearing protection when noise levels are determined to be in excess of 29 CFR 1910.95 requirements. Noise monitoring will be performed to determine noise levels by the Field Team Leader.

### 4.2.5 Overt Chemical Exposure

Typical response procedures include:

#### SKIN CONTACT:

Use copious amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention. Eye wash will be provided on-site by contractor at the work zone and support zone as appropriate. If affected, eyes should be continuously flushed for a minimum of 15 minutes.

### INHALATION:

Move to fresh air and transport to hospital. Decontaminate as other actions permit.

#### **INGESTION:**

Transport to emergency medical facility. Decontaminate as permitted by other requirements.

### PUNCTURE WOUND OR LACERATIONS:

Transport to emergency medical facility. Field Team Leader will provide Material Safety Data Sheets (MSDS) to medical personnel as requested. Decontaminate as permitted by other requirements.

### 4.2.6 Adverse Weather Conditions

In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of field workers. Some items to be considered before determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.
- Treacherous weather-related working conditions.
- Limited visibility.
- Potential for electrical storms or high winds.

### 4.3 MEDICAL EVALUATION AND SURVEILLANCE PROGRAM

All field project personnel shall receive a medical evaluation in accordance with 29 CFR 1910.120. Personnel who receive a medical evaluation will be notified by the medical contractor as to the outcome of their evaluation. This will be in the form of a confidential report addressed to the individual and will contain a breakdown of the clinical findings. In addition, it will indicate any areas of concern which would justify further medical consultation by the individual's personal physician. In the event that the areas of concern are of a severe nature, a follow-up notification will be made to the individual by the medical consultant to answer any questions the employee may have.

### 4.3.1 Dosimetry/Personnel Monitoring

All project personnel shall participate in a dosimetry program administered by the Project Health Physics Personnel. The dosimetry program shall comply with 32 IAC 340 (i.e. dosimeters shall be processed by a dosimetry processor accredited by the National Voluntary Laboratory Accreditation Program). The Project Health Physics Personnel shall maintain records of all radiation exposures incurred by field personnel including all contractors. These records will be maintained in an up-to-date manner to comply with the requirements of 321AC 340.4010. The HSC shall review the results of personal exposure monitoring to determine compliance with exposure limit requirements.

### 4.3.2 Requirement for Dosimetry

Personal dosimetry is required for anyone who enters a work area within the Site in which he/she may receive in one calendar year a dose in excess of 10% of the limits in 32 IAC 340. Any person who works in a radiation area will be required to have a personal dosimeter. As a matter of policy, all individuals shall be required to use a dosimeter (either self-reading type, film badge or Thermoluminescence Detector (TLD)) whenever they enter the Exclusion Zone.

### 4.3.3 Bioassay

Bioassay is the determination of the types and amounts of radioactive materials, which are inside the body. By analyzing the rate of deposition, the rate of excretion, and any other available information regarding placement in the body, internal exposures from radioactive materials can be estimated.

Bioassays are not anticipated to be required for the excavation and removal activities proposed, based on levels documented as present. The determination of the need for bioassay will be based on dosimetry monitoring and review and recommendations from the Project Health Physics personnel.

#### 4.3.4 Emergency Medical Treatment

Emergency first aid should be administered on-site as appropriate. An emergency first-aid station will be established and will include a first-aid kit for onsite emergency first aid. The individual should be decontaminated if possible, depending on the severity of the injury, and transported to the nearest medical facility, if needed.

Treatment of the injury is of primary concern and decontamination a secondary concern. Levels of radioactive contamination at the Site could be acutely hazardous if decontamination is not undertaken during an emergency situation. The Field Team Leader will complete the appropriate incident report, if warranted. See Section 4.4, Accident and Incident Reporting.

Provisions for emergency medical treatment shall be integrated with the following guidelines:

- At least one individual qualified to render first aid and Cardiopulmonary Resuscitation (CPR) will be assigned to each shift.
- Emergency first aid stations in the immediate work vicinity.
- Conspicuously posted phone numbers and procedures for contacting ambulance services, fire department, police, and medical facilities.
- Maps and directions to medical facilities.
- Conspicuously posted evacuation routes and gathering area locations shall be posted around the Site.

## 4.4 ACCIDENT AND INCIDENT REPORTING

All accidents, injuries, or incidents will be reported to the HSC. This accident/incident will be reported as soon as possible to the employee's supervisor. An Accident/Incident Form will be completed by the Field Team Leader, and a copy will be forwarded to the Project Manager. A copy of the form is shown as Figure 4.1.

#### 5.0 TRAINING

All Site personnel shall be trained and certified in accordance with 29 CFR 1910.120.

#### 5.1 PROJECT- AND SITE-SPECIFIC TRAINING

Prior to project start-up, all assigned personnel shall receive an initial project- and site-specific training session. The training will include a discussion of radiation basics. This training shall include, but not be limited to, the following areas:

- Review of the Health and Safety Plan;
- Review of applicable radiological and physical hazards;
- PPE levels to be used by Site personnel;
- Site security control;
- Emergency response and evacuation procedures;
- Project communication;
- Required decontamination procedures;
- Prohibited on-site activities;
- Instructions to workers in accordance with 10 CFR 1912; and
- U.S. NRC Regulatory Guide 8.13 and Declared Pregnant Woman Policies (Females).

#### 5.2 VISITOR ORIENTATION

All non-essential personnel and visitors who plan to enter the exclusion zone will be briefed on the HASP requirements and 10 CFR 1912 requirements prior to entry with a trained Site escort. In addition, female visitors will be instructed regarding U.S. NRC Regulatory Guide 8.13 and Declared Pregnant Woman Policies.

#### 5.3 SAFETY TAILGATE MEETINGS

Before the start of the workweek, on Monday morning, the Field Team Leader will assemble the Site personnel for a brief safety meeting. The purpose of these meetings will be to discuss project status, problem areas, conditions, safety concerns, PPE levels and to reiterate HASP requirements. The Field Team Leader will complete a Safety Meeting Report (Figure 5.1) to indicate the contents of the meeting and the attendees.

### 5.4 FIRST AID

At least one (1) individual, trained and qualified to administer first aid and CPR in accordance with American Red Cross requirements, will be present at the Site.

#### 5.5 SAFE WORK PERMIT

Site workers in special work conditions such as confined space, hot work, trenching, or other physical hazards, must be skilled at such work and trained to recognize these as special work conditions. Confined space is defined by OSHA 1910.146. Section 13 of this HASP contains further information on the confined space program to be followed. Site workers will be provided with work permit by the HSC.

#### 6.0 COMMUNICATIONS

#### 6.1 GENERAL COMMUNICATIONS

The Field Team Leader will have available at the Site the means for telephone communications, or an equivalent means of communication, for summoning emergency assistance from the fire/ambulance and police departments in the event they are required. The telephone will also act as a direct link to technical personnel for information pertaining to all phases of the project.

#### 6.2 RADIO/TELEPHONES

Short-range walkie-talkies or cellular telephones will be made available to designated personnel working at the Site.

#### 6.3 EMERGENCY WARNING

In the event of an emergency condition, the Field Team Leader will notify project personnel verbally if all are within immediate hearing and via a bullhorn if the Site area is large. The Field Team Leader will also notify visitors present within the area. Site personnel will immediately proceed to a pre-designated assembly area as designated by the Field Team Leader during the daily safety meeting. Personnel will remain in the designated area until further instructions are received by the Field Team Leader.

All communication equipment will be tested at the beginning of each day to verify operational integrity.

#### 6.4 HAND SIGNALS

Hand signals will be used by field teams in conjunction with the buddy system. Hand signals shall be familiar to the entire field team before operations commence and should be reviewed during site-specific training.

<u>Signal</u>	Meaning
Hand gripping throat	Out of air; can't breathe
Grip partner's wrist	Leave area immediately; no debate
Hands on top of head	Need assistance
Thumbs up	OK; I'm all right; I understand
Thumbs down	No; negative

#### 6.5 SITE SECURITY

Visitors and other non-essential personnel may enter the Site only upon authorization by the Field Team Leader. This restricted access will ensure that the Field Team Leader can communicate with each person authorized to enter the work area.

#### 7.0 PERSONNEL EXPOSURE AND AIR QUALITY MONITORING

#### 7.1 AIR QUALITY (DUST)

Due to the nature of the principal contaminants associated with the project, dust suppression will be important as a means of minimizing exposure levels and off-site migration of contaminants. Per USEPA protocols there will be no visible dust generated during the activities. The Field Team Leader will routinely monitor the Site. The OSHA personal exposure limit (PEL) for nuisance dust is 15 mg/m3.

#### 7.2 AIRBORNE RADIOACTIVITY MONITORING

Monitoring for airborne radioactivity exposure is as important as monitoring for external radiation exposure. Monitoring for airborne radioactivity exposure requires the following elements:

- Air sampling for radioactive particulates,
- Record keeping regarding personnel work locations and time in location, and
- Respiratory protective equipment records regarding devices used by workers in airborne radioactivity areas.

By closely monitoring these three elements, a continuous record of personnel exposure to airborne radioactivity is maintained.

Monitoring of potential worker exposure to radiation will be done using dosimeters (film badges) and personal air sampling equipment, as warranted. Individual dosimeters will be analyzed at the conclusion of discrete field efforts or mobilizations to the site. It is expected that naturally occurring radon and thorium daughters will interfere with analyses. Additional evaluation of samples shall be performed if it is determined to be necessary based upon elevated results. Such analyses shall be performed after allowing time for decay of some interfering radionuclides. Filters used in personal air monitoring equipment will be analyzed for radioactive elements (radionuclides) at a frequency of one per week during the cleanup of radiologically-impacted material. This analysis will be performed on a 24 to 48-hour laboratory turnaround basis by RSSI of Morton Grove, Illinois

Downwind monitoring of the excavation areas for radioactive particulate activity also will be performed if radiation "hot spots" are detected. If required, STS consultants will ensure that high volume air samplers are setup and run continuously during operations and be evaluated on a daily basis for total radium. Comparisons will be made Federal Regulations and to 32 IAC 340 Appendix A if more restrictive to ensure that adequate radiological controls are in place for workers and the general public. As low as reasonably achievable (ALARA) concepts will be utilized when considering protective measures to ensure that internal exposures are minimized, while also considering the effects of such protective measures with respect to external exposures. Controls on the Site, such as wetting of soils and procedural changes, will be employed prior to the prescription of respiratory protective equipment.

Time decay of interfering nuclides generally refers to radon-222 decay and daughters but may also include thorium decay. The specific times for decay of samples is best addressed in procedures rather than in the health and safety plan. Air samples will be decayed a minimum of 5 hours to allow for counting without interference from radon222 and its daughters. Thorium (Rn-220), if present in significant amounts, will require decay for up to 4 days to allow for decay of it is Pb-212 daughter (10.6 hour half life).

After filters have been collected and decayed overnight, there will be a morning count by the lab of the filter that will serve to identify high gross counts for the previous day. Filters used in high volume air monitoring will be analyzed for radioactive elements (radionuclides) at a frequency of one per week during the cleanup of radiologically-impacted material. This analysis will be performed on a 24 to 48-hour laboratory turnaround basis by RSSI of Morton Grove, Illinois. Results will alert health and safety staff of a potential problem, which they can investigate more promptly. The total radium count, after 4 days decay, will serve to be the official measurement of Th-Alpha.

#### 7.3 INTERNAL MONITORING

Internal monitoring to determine intakes of radioactive material will be performed as needed based upon the results of the air sampling program. Bioassay methods to be considered should include in-vivo, as well as in-situ, assessments. Routine bioassay of workers is not anticipated based upon the low concentrations of radioactivity in soils to be excavated.

#### 7.4 EXTERNAL RADIATION MONITORING

External radiation monitoring of workers will be performed using film badges or thermoluminescent dosimeters. Dosimetry will be provided and processed by a service holding National Voluntary Laboratory Accreditation Program (NVLAP) certification. Pocket dosimeters may also be utilized for visitors and other infrequent personnel requiring access to the Site.

#### 7.5 RADIOLOGICAL SURVEYS

Radiological surveys will be performed to ensure that radiation levels and contamination levels are within regulatory limits for workers and the general public. Radiation surveys will consist of ambient gamma surveys using sodium iodide detector or others, as appropriate.

#### 7.6 CONTAMINATION MONITORING

Samples shall be obtained periodically in the Site to ensure that radioactivity is present at acceptable levels and is prevented from leaving the Site. Decontamination of elevated areas will be performed to maintain contamination at levels at regulatory levels (NRC 1.86 level or IDNC if more restrictive) as well as to ALARA.

Before leaving the exclusion zone, Site personnel shall be checked through use of a hand-held frisker to ensure that contamination is not present on skin or clothes. The Field Team Leader will be immediately informed regarding any contamination on individuals and will initiate appropriate decontamination techniques. Proper disposition of contaminated personal effects and clothing also will be the responsibility of the Field Team Leader.

#### 7.7 ACTION LEVELS

#### 7.7.1 Radiological Action Levels

Radiological action levels for on-site workers will be determined by a Geiger-Mueller (GM) pancake detector as well as airborne particulate monitoring for the presence of radioactivity. The Field Team Leader will perform radiological monitoring. The radioactive contamination on the Site is generally particulate and insoluble in water. It is anticipated that in most cases there will be no fixed contamination on the workers. Action levels as determined by radioactive monitoring can be found in Table 7.1. Any actions at the site will also be based on gamma exposure rates.

To minimize the need for upgrade of personal protection equipment due to airborne contamination, engineering controls such as the use of water to minimize dust levels will be implemented as necessary during excavation and restoration activities.

#### 8.0 PERSONAL PROTECTIVE EQUIPMENT

It is anticipated that most excavation activities in designated exclusion zones can be conducted in Level D personal protective equipment (PPE), with a contingency upgrade to Level C, based on the action levels listed in Section 7. Level C will be used when required by Special Work Permits, or when directed by the Field Team Leader.

Modified Level D personal protective clothing and equipment for excavation activities includes:

- Tyvek Coveralls
- Hard hat
- Chemical resistant, OSHA approved safety shoes/boots
- Surgical Gloves
- Safety glasses
- Dust mask (optional)
- Booties

Level C protective clothing and equipment includes:

- Full-face air-purifying respirator (NIOSH/MSHA approved) fitted with radionuclides/ HEPA cartridges and/or organic vapor cartridges, depending on which action levels are exceeded (see Section 7 of s HASP)
- Coveralls
- Tyvek coveralls required in areas when splashing by contaminated soils or water is a possibility
- Cotton or leather gloves
- Disposable latex inner gloves required in areas when splashing by contaminated soils or water is a possibility
- Nitrile outer gloves (taped) required in areas when splashing by contaminated soils or water is a possibility
- Chemical-resistant steel toe boots
- Hard hat

Action levels used to determine the need to upgrade or downgrade the levels of protection are described in Section 7.0 of this HASP

#### 9.0 CONTAMINATION REDUCTION PROCEDURES

#### 9.1 EQUIPMENT

Portable equipment will be decontaminated with soap and water and rinsed with tap water. Heavy equipment will be steam-cleaned with water and, if necessary, a detergent solution. It is not anticipated that chemical cleaning will be necessary for decontamination.

#### 9.2 PERSONNEL

If levels of radioactivity show that individuals can remove coveralls and other personal protective clothing and equipment before leaving the work-site and, thus complete decontamination, the individuals may leave the Site. If, however, levels of radioactivity show that individuals cannot achieve decontamination by the removal of coveralls and showering is required, they will be dressed in clean coveralls, boots and gloves and be transported to Northwestern Memorial Hospital to complete decontamination.

If substantial skin contamination occurs on an individual working with radioactive materials, the following specific procedures should be followed to prevent fixation of the material in the skin or absorption of the radioactivity through the skin. Numerical action criteria is listed in attached Table 7.1.

<u>Immediate Action</u>: Notify the HSC or Field Team Leader, who will supervise the decontamination. If contamination is spotty, the HSC or Field Team Leader will supervise the cleaning of the individual spots with swabs, soap, or water. If the contamination is general, the HSC or Field Team Leader may recommend washing the area gently in warm or cool water (not hot) using hand soap (not detergent) for one minute. Rinse, dry, and monitor for radioactivity. This soap wash step may be repeated three times.

**Evaluation**: If the above procedure fails to remove all the skin contamination, the treatment should cease. An evaluation of the skin contamination should be performed by the HSC or Field Team Leader including an estimate of the dose commitment to the skin, and the quantity and identity of the nuclides contaminating the skin. If additional decontamination steps are necessary, they are performed and documented by the HSC. The guidelines for Personnel Decontamination in the Radiological Health `Handbook, HEW 1970, beginning on page 194, can be used as applicable. CAUTION: Do not use chemicals for personnel decontamination until full evaluation of the contamination is made by the HSC or Field Team Leader.

#### 9.3 CONTAMINATION PREVENTION

Work practices that minimize the spread of contamination will reduce worker exposure and help ensure valid sample results by precluding cross-contamination. Procedures for contamination avoidance include:

- knowing the limitations of all personal protective equipment being used
- avoiding walking through areas of obvious or known contamination
- refraining from handling or touching contaminated materials directly. Do not sit or lean on potentially contaminated surfaces
- ensuring personal protective equipment has no cuts or tears prior to donning
- fastening all closures on suits, covering with tape if necessary
- taking steps to protect against any skin injuries
- staying upwind of airborne contaminants
- When working in contaminated areas, refraining from eating, chewing gum, smoking, or engaging in any activity from which contaminated materials may be ingested

#### 9.4 DISPOSAL PROCEDURES

All discarded materials, waste materials, or other field equipment and supplies should be handled in such a way as to preclude the spread of contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated waste materials (e.g., clothing, gloves) shall be monitored, and placed in the metal container provided by Kerr-McGee that designated for radioactive waste. Appropriate labels shall be affixed to all containers of radioactive materials.

#### 10.0 GENERAL WORK PRECAUTIONS

#### 10.1 GENERAL WORK PRECAUTIONS

The following general work precautions apply to all Site personnel.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work area.
- Hands and face must be thoroughly washed upon leaving the work area. Wash water will be provided at the Site for this purpose.
- Whenever levels of radioactivity warrant, the entire body should be thoroughly washed, as soon as possible, after the protective coveralls and other clothing are removed as part of the decontamination process.
- No facial hair that interferes with a satisfactory fit of the mask-to-face-seal is allowed on personnel required to wear respirators.
- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, Leachate, discolored surfaces, kneel on ground, lean, sit, or place equipment on drums, containers, or the ground.
- Medicine, drugs and alcohol may interfere with or impair judgment and reaction times. Therefore, usage of prescribed drugs must be specifically approved by a qualified physician and made known to the Field Team Leader prior to an individuals' presence on the work-site. Alcoholic beverage intake is strictly prohibited at the Site and prior to work.
- All personnel must be familiar with standard operating procedures and any additional instructions and information contained in the HASP.
- All personnel must adhere to the requirements of the HASP.
- Contact lenses are not permitted when respiratory protection is required or where the possibility of a splash exists.
- Personnel must be cognizant of symptoms for heat stress and cold stress, and knowledgeable regarding emergency measures contained in the Emergency Plan.
- Respirators shall be inspected, cleaned and disinfected after each day's use or more often, if necessary.
- Each employee shall be familiar with his/her company's Respiratory Protection Program.

Any radioactive or potentially radioactive PPE, decon water and other items will be placed in the designated Kerr-McGee supplied container for proper disposal.

#### 10.2 OPERATIONAL PRECAUTIONS

The following operational precautions must be observed at all times.

- All Site personnel shall be adequately trained and thoroughly briefed on anticipated hazards, equipment to be worn, safety practices to be followed, emergency procedures, and communications.
- All required respiratory protective devices and clothing shall be worn by all personnel going into areas designated for wearing protective equipment.
- All Site personnel shall use the buddy system when wearing respiratory protective equipment. At a minimum, a third person, suitably equipped as a safety backup, is required.
- During continual operations, on-site workers act as a safety backup to each other. Off-site personnel provide emergency assistance.
- Personnel should practice any unfamiliar operations prior:-to undertaking the actual procedure.
- Entrance and exit locations shall be designated and emergency escape routes delineated. Warning signals for Site evacuation must be established.
- Personnel and equipment in the Site should be minimized, consistent with effective Site operations.
- Work areas for various operational activities shall be established.
- Procedures for leaving a contaminated area shall be planned and implemented prior to going onsite. Work areas and decontamination procedures shall be established based on expected Site conditions.
- Frequent and regular inspection of Site operations will be conducted by the HSC to ensure compliance with the HASP. If any changes in operation occur, the HASP will be modified to reflect those changes.

#### 11.0 SANITARY FACILITIES

#### 11.1 POTABLE WATER

- a. An adequate supply of potable drinking water shall be maintained at all times immediately outside the Site. Drinking water shall meet all federal, state and local health requirements.
- b. Drinking water shall be supplied to project personnel via approved dispensing sources.
- c. Paper cups shall be permitted for the drinking of potable water supplies.
- d. Drinking water dispensers shall be clearly marked and shall, in no way, have the potential for contamination from non-potable supplies.
- e. Site personnel must be fully decontaminated prior to approaching the drinking water supply.

#### 11.2 TOILET FACILITIES

- a. Adequate toilet facilities shall be provided at the Site.
- b. These facilities shall be in the form of portable chemical toilets.
- c. Routine servicing and cleaning of the toilets should be established with the selected contractor and shall be in accordance with federal, state, and local health regulations.
- d. Site personnel must be fully decontaminated prior to approaching the toilet facilities.

#### 11.3 WASHING AREAS

- a. Adequate washing areas shall be provided for personal use within the work area.
- b. Washing areas shall be maintained in a sanitary condition and will be provided with adequate supplies of soap towels for drying, and covered waste receptacles.
- c. Washing areas shall be maintained and sanitized daily.
- d. No eating, drinking or smoking shall be permitted in the work area. This policy will be strictly enforced by the Field Team Leader.

#### 12.0 FIRE CONTROL EQUIPMENT

An adequate number of approved portable fire extinguishers (class rated A, B and C) shall be readily available at the Site at all times.

All Site personnel shall be trained in the use of the extinguishers. Extinguishers shall only be used on outbreak stage fires or fires of minor nature. The local fire department shall be contacted in the event of a larger fire.

#### 13.0 CONFINED SPACE PROGRAM

#### 13.1 PURPOSE

In the event that confined space work is a necessity, a Confined Space Program will be implemented. Training in the recognition of confined spaces is a component of the health and safety training program.

The purpose of the Confined Space Program is to establish procedures to protect personnel from this serious hazard in the course of their work, and at a minimum, to comply with 29 CFR OSHA 1910.146. This document assigns responsibilities and sets standards for personnel engaged in activities where confined spaces may be present.

#### 13.2 RESPONSIBILITIES

#### 13.2.1 Health and Safety Coordinator

The Health and Safety Coordinator (HSC) administers the Confined Space Program. The Health and Safety Coordinator's responsibilities include:

- Review of the HASP for potential confined space hazards and design alternative approaches to accomplish the confined space tasks;
- Coordinating and managing the Confined Space Program in the event one is required;
- Establishing priorities for implementation of the program;
- Assisting with recognition and implementation of the Confined Space Program;
- Advising project management on confined space issues; and
- Communicating the Confined Space Program to personnel by training related to specific Site activities.

#### 13.2.2 Project Manager

The Project Manager (PM) directs the application of the Confined Space Program to project work. The Project Manager is responsible for:

- Working with the Health and Safety Coordinator to prepare information describing activities that might be conducted in a confined space area;
- Assuring that all personnel engaged in project activities are familiar with the definition of a confined space;
- Assuring that personnel are familiar with the Confined Space Program, and that project activities are conducted in compliance with the Confined Space Program;
- Assuming the responsibilities of the Field Team Leader if another person is not assigned these responsibilities.

#### 13.2.3 Field Team Leader

The Field Team Leader (FTL) is responsible for the implementation of the Confined Space Program on-site during field activities. The Field Team Leader is responsible for:

- Overseeing implementation of the Confined Space Program during field operations; and
- Reporting confined space work activity, and any violations of the Confined Space Program, to the Project Manager and the Health and Safety Coordinator.

#### 13.2.4 Personnel

Personnel are responsible for:

- Familiarizing themselves with the Confined Space Program and following it;
- Becoming familiar with the criteria for determining a confined space, and with the monitoring, permitting, and other requirements of the program; and
- Reporting immediately a confined space condition to the Field Team Leader.

#### 13.3 DEFINITION OF A CONFINED SPACE

Confined space means a space that

- 1. Is large enough and so configured that an employee can bodily enter and perform assigned work
- 2. Has limited or restricted means for entry or exit (such as pits, storage bins, hoppers, crawl spaces, and storm cellar areas)
- 3. Is not designed for continuous employee occupancy

Any workspace meeting all of these criteria is a confined space and the Confined Space Program must be followed.

#### 13.4 CONFINED SPACE ENTRY PROCEDURES

#### 13.4.1 Safety Work Permit Required

All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Confined Space Entry Permit (Figure 13.1) for entry into a confined, space must be completed before work begins; it verifies completion of the items necessary for confined space entry. The Permit will be kept at the Site for the duration of the confined space work If there is an interruption of work, or the alarm conditions change, a new Permit must be obtained before work begins.

A permit is not required when the space can be maintained for safe entry by 100% fresh air mechanical ventilation. This must be documented and approved by the Health and Safety Coordinator. Mechanical ventilation systems, where applicable, shall be set at 100% fresh air.

The Field Team Leader must certify that all hazards have been eliminated on the Entry Permit. If conditions change, a new permit is required.

#### 13.4.2 Pre-entry Testing for Potential Hazards

#### a. Surveillance

Personnel first will survey the surrounding area to assure the absence of hazards such as contaminated water, soil, sediment, barrels, tanks, or piping where vapors may drift into the confined space.

#### b. Testing

No personnel will enter a confined space if any one of these conditions exists during pre-entry testing. Determinations will be made for the following conditions:

1. Presence of toxic gases or dusts: Equal to or more than 5 parts per million (ppm) on the organic vapor analyzer with an alarm, above background outside the confined space area; or other action levels for specific gases, vapors, or dusts as specified in the Health and Safety Plan and the Confined Space Permit based on knowledge of Site constituents;

- 2. <u>Presence of explosive/flammable gases</u>: Equal to or greater than 10% of the Lower Explosive Limit (LEL) as measured with a combustible gas indicator or similar instrument (with an alarm); and,
- 3. Oxygen Deficiency: A concentration of oxygen in the atmosphere equal to or less than 19.5% by volume as measured with an oxygen meter.

Pre-entry test results will be recorded and kept at the Site for the duration of the job by the Field Team Leader. Affected personnel can review the test results.

- c. Authorization
  - Only the Field Team Leader and the Health and Safety Coordinator can authorize any personnel to enter into a confined space. This is reflected on the Safe Work Permit for entry into a confined space. The Field Team Leader must assure that conditions in the confined space meet permit requirements before authorizing entry.,
- d. Safe Work Permit
   A Safe Work Permit for confined space entry must be filled out by the Health and Safety
   Coordinator or Field Team Leader. A copy of the Safe Work Permit is included as Figure 5.2.
- e. Attendants
  One worker will stand by outside the confined space ready to give assistance in the case of an emergency. Under no circumstances will the standby worker enter the confined space or leave the standby position. There shall be at least one other worker not in the confined space within sight or call of the standby worker.
- f. Observation and Communication
  Communications between standby worker and entrant(s) shall be maintained at all times.
  Methods of communication that may be specified in the Safe Work Permit and the HASP may include. voice, voice by powered radio, tapping or rapping codes, signaling tugs on rope, and standby worker's observations that activity appears normal.

#### 13.4.3 Rescue Procedures

Acceptable rescue procedures include entry by a team of rescuers only if the appropriate self-contained breathing apparatus (SCBA) is available; or use of public emergency services.

The standby worker must be trained in first aid, CPR, and respirator use. A first aid kit should be on hand and ready for emergency use. The standby worker must be trained in rescue procedures. Retrieval of an unconscious victim in a confined space will only be conducted by trained rescue personnel. An emergency call to 911 will be initiated to assist the victim.

#### 13.5 TRAINING

Personnel who will engage in field activities will be given annual training on the requirements and responsibilities in the Confined Space Program and on OSHA 1910.146. Only trained personnel can work in confined spaces. Workers should be experienced in the tasks to be performed, instructed in proper use of respirators, lifelines and other equipment, and practice emergency procedures and self-rescue.

Before each Site activity, the determination of confined space work will be part of the Site characterization process. Training in the site-specific confined space activities will be part of the site-specific health and safety training:

#### 13.6 SAFE WORK PRACTICES

- Warning signs should be posted. These include warnings for entry permits, respirator use, prohibition of hot work and emergency procedures and phone numbers.
- Cylinders containing oxygen, acetylene or other fuel such as gasoline must be removed a safe distance from the confined space work area.
- Purging and ventilating is done before work begins to remove hazardous vapors from the space. The space should be monitored to ensure that the gas used to purge the space (e.g, tank) has also been removed. Local exhaust should be used where general exhaust is not practical.
- The buddy system is used at all times. A standby person always must be posted within sight of, or in communication with, the person inside the confined space. The standby should not enter the confined space, but instead will call for help in an emergency and not leave the post. Communication should be maintained at all times with workers inside the confined space.
- Emergency planning in the HASP and a Safe Work Permit must be approved in advance and the proper rescue equipment must be immediately available.

•

#### 14.0 ELECTRICAL LOCKOUT/TAGOUT

The field Team Leader must approve all work in areas requiring lockout/tagout procedures. Specific procedures and permitting requirements will be specified in the HASP, or in a revised HASP based on the need for a worker to work around electrical equipment.

All systems must be locked out and tagged before the work begins. This includes pipes, air lines, electrical equipment and mechanical devices. The equipment must be start tested and approved for use by a worker by the Health and Safety Coordinator of the Field Team Leader by start-testing to make sure the locked-out equipment does not operate.

#### 15.0 SITE SIGNATURES

Please sigh this sheet to acknowledge that you have read the Work Plan and Health and Safely Plan and understand their contents. Also sign in each day at the site.

Name	Date
-	
-	

Former Time-Life Property	Health & Safety Plan

# Appendix E

# **Laboratory Analytical Results**

- Analytical Results for Non-radioactive Fill
- Radiological Sample Results
- Confirmatory Sample Results



1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233 IL ELAP / NELAC Accreditation # 100292

January 25, 2005

Mr. Larry Bertsch **GAIATECH INC.** 200 North LaSalle, Suite 2600 Chicago, IL 60601

Project ID: 49175000

First Environmental File ID: 46762 Date Received: January 19th, 2005

Dear Mr. Bertsch:

The above referenced project was analyzed as directed on the enclosed chain of custody form.

Analyses were performed in accordance with methods from the USEPA publication <u>Test Methods</u> for Evaluating Solid Waste, <u>Physical/Chemical Methods</u>, SW-846, 3<sup>rd</sup> Edition, December 1996. The actual method references are listed on the Analytical Report. Results except for TCLP parameters are reported on a dry weight basis per method protocols. Herbicide analysis was performed by PDC Laboratories, Inc of Peoria, IL (IL ELAP 100230).

All analyses were performed within established holding times, and all Quality Control criteria as outlined in the methods and current IL ELAP / NELAP have been met; Certificate No. 000986 – 03/02/04 through 02/28/05. QA/QC documentation will remain on file for future reference.

It has been a pleasure providing you with analytical services, and we look forward to working with you again in the future. If you have any questions regarding this report, or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworsk

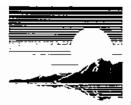
Project Manager



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Client: GAIATECH, INC.

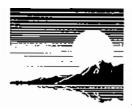
Project Number:	49175000	
Sample ID: WC-I (Composite		
Date Taken:	01/17/05	
Time Taken: 15:00		
Lab Sample ID:	46762	
Volatile Compounds - Method 5035A/8260B (mg/kg)		
Date of Analysis	01/20/05	
Acetone	<0.010	
Benzene	< 0.005	
Bromodichloromethane	<0.005	
Bromoform	<0.005	
Bromomethane	<0.010	
2-Butanone	<0.010	
Carbon disulfide	<0.005	
Carbon tetrachloride	<0.005	
Chlorobenzene	<0.005	
Chlorodibromomethane	<0.005	
Chloroethane	<0.010	
Chloroform	<0.005	
Chloromethane	<0.010	
I,I-Dichloroethane	<0.005	
1,2-Dichloroethane	<0.005	
I, I-Dichloroethene	<0.005	
cis-1,2-Dichloroethene	<0.005	
trans-1,2-Dichloroethene	<0.005	
1,2-Dichloropropane	<0.005	
cis-1,3-Dichloropropene	<0.005	
trans-1,3-Dichloropropene	<0.005	
Ethyl benzene	<0.005	
2-Hexanone	<0.010	
4-Methyl-2-pentanone	<0.010	
Methylene chloride	<0.005	
мтве	<0.005	
Styrene	<0.005	
1,1,2,2-Tetrachloroethane	<0.005	
Tetrachloroethene	< 0.005	
Тојиепе	<0.005	
1,1,1-Trichloroethane	<0.005	
1,1,2-Trichloroethane	<0.005	
Trichloroethene	<0.005	
Vinyl Acetate	<0.010	
Vinyl Chloride <0.002		
Xylenes	0.011	



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Client: GAIATECH, INC.
Project Number: 49175000

Project Number: 49175000		
Sample ID:		
Date Taken:		
Time Taken:	15:00	
Lab Sample ID:	46762	
BNA Compounds Method 3540C		
Date of Analysis	01/24/05	
Acenaphthene	<0.330	
Acenaphthylene	0.901	
Anthracene	1.550	
Benzidine	<0.330	
Benzo[a]anthracene	6.200	
Benzo[b]fluoranthene	6.850	
Benzo[k]fluoranthene	4.730	
Benzo[g,h,i]perylene	2.380	
Benzo[a]pyrene	6.980	
Benzoic Acid	< 0.330	
Benzyl Alcohol	<0.330	
bis(2-chloroethoxy)methane	<0.330	
bis(2-chloroethyl)ether	<0.330	
bis(2-chloroisopropyl)ether	<0.330	
bis(2-ethylhexyl)phthalate	<0.330	
4-Bromophenyl-phenylether	<0.330	
Butylbenzylphthalate	<0.330	
Carbazole	<0.330	
4-Chloroaniline	<0.330	
4-Chloro-3-methylphenol	<0.330	
2-Chloronaphthalene	<0.330	
2-Chlorophenol	<0.330	
4-Chlorophenyl-phenylether	<0.330	
Chrysene	6.350	
Dibenz[a,h]anthracene	1.410	
Dibenzofuran	0.388	
1,2-Dichlorobenzene	<0.330	
1,3-Dichlorobenzene	<0.330	
1,4-Dichlorobenzene	<0.330	
3,3-Dichorobenzidine	<0.660	
2,4-Dichlorophenol	<0.330	
Diethylphthalate	_<0.330	
2,4-Dimethylphenol	<0.330	
Dimethylphthalate	<0.330	
Di-n-butylphthalate	<0.330	
4,6-Dinitro-2-methylphenol	<1.600	
2,4-Dinitrophenol	<1.600	



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Client: GAIATECH, INC.

Sample ID: WC-1 (Composite		
Date Taken:		
Time Taken:	15:00	
Lab Sample ID:	46762	
BNA Compounds Method 3540C/8270C (ug/kg)		
Date of Analysis	01/24/05	
2,4-Dinitrotoluene	<0.250	
2,6-Dinitrotoluene	<0.260	
Di-n-octylphthalate	<0.330	
Fluoranthene	9.800	
Fluorene	0.398	
Hexachlorobenzene	< 0.330	
Hexachlorobutadiene	<0.330	
Hexachlorocyclopentadiene	< 0.330	
Hexachloroethane	<0.330	
Indeno[1,2,3-cd]pyrene	2.080	
Isophorone	< 0.330	
2-Methylnaphthalene	_<0.330	
2-Methylphenol	<0.330	
3&4-Methylphenol	<0.330	
Naphthalene	0.543	
2-Nitroaniline	<1.600	
3-Nitroaniline	<1.600	
4-Nitroaniline	<1.600	
Nitrobenzene	< 0.260	
2-Nitrophenol	<1.600	
4-Nitrophenol	<1.600	
N-Nitrosodimethylamine	<0.330	
N-Nitroso-di-n-propylamine	<0.330	
n-Nitrosodiphenylamine	<0.330	
Pentachlorophenol	<1.600	
Phenanthrene	4.280	
Phenol Phenol	<0.330	
Pyrene	8.720	
1,2,4-Trichlorobenzene	<0.330	
2,4,5-Trichlorophenol	<0.330	
2,4,6-Trichlorophenol	<0.330	



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Client: GAIATECH, INC.

Aldrin         <0.0080           alpha-BHC         <0.0020           beta-BHC         <0.0080           delta-BHC         <0.0080           Lindane (gamma-BHC)         <0.0080           alpha-Chlordane         <0.080           gamma-Chlordane         <0.080           4,4'-DDD         <0.0160           4,4'-DDE         <0.0160           4,4-DDT         <0.0160           Dieldrin         <0.0080           Endosulfan I         <0.0160           Endosulfan sulfate         <0.0160           Endrin         <0.0160           Endrin aldehyde         <0.0160           Endrin ketone         <0.0160           Heptachlor         <0.0080           Methoxychlor         <0.080           Toxaphene         <0.160           Herbicides Method 8151 (mg/kg)           Date of Analysis         01/22/05           2,4-D         <0.010	Troject Number.		
Time Taken:   15:00   46762   PCBs Method 3540C/8082 (mg/kg)   Date of Analysis   01/24/05   Aroclor 1016   < 0.080   Aroclor 1221   < 0.080   Aroclor 1232   < 0.080   Aroclor 1242   < 0.080   Aroclor 1242   < 0.080   Aroclor 1248   < 0.060   Aroclor 1254   < 0.160   Aroclor 1254   < 0.160   Aroclor 1254   < 0.160   Aroclor 1260   < 0.160   Pesticides Method 3540C/8081 A (mg/kg)   Date of Analysis   01/24/05   Aldrin   < 0.0080   Aldrin   < 0.0160   Aldrin   < 0.0080   Aldrin   < 0.0160   Aldrin   < 0.0080   Aldrin   Aldri			
Lab Sample ID:			
PCBs Method 3540C/8082 (mg/kg)			
Date of Analysis	Lab Sample ID: 46762		
Aroclor 1016	PCBs Method 3540C/8082 (m		
Aroclor 1232	Date of Analysis		
Aroclor 1232	Aroclor 1016	<0.080	
Aroclor 1242		<0.080	
Aroclor 1248	Aroclor 1232	<0.080	
Aroclor 1254	Aroclor 1242	<0.080	
Aroclor 1260   <0.160     Pesticides Method 3540C/8081A (mg/kg)     Date of Analysis	Aroclor 1248	<0.080	
Date of Analysis	Aroclor 1254	<0.160	
Date of Analysis         01/24/05           Aldrin         <0.0080			
Aldrin         <0.0080	Pesticides Method 3540C/8081	A (mg/kg)	
alpha-BHC         <0.0020	Date of Analysis	01/24/05	
beta-BHC	Aldrin	<0.0080	
delta-BHC         <0.0080	alpha-BHC	<0.0020	
Lindane (gamma-BHC)         <0.0080	beta-BHC	<0.0080	
alpha-Chlordane         <0.080	delta-BHC	<0.0080	
Samma-Chlordane   <0.080			
4,4'-DDD       <0.0160			
4,4'-DDE       <0.0160	gamma-Chlordane	< 0.080	
4,4-DDT       <0.0160	4,4'-DDD	<0.0160	
Dieldrin         <0.0080	4,4'-DDE	<0.0160	
Endosulfan I	4,4-DDT	<0.0160	
Endosulfan II	Dieldrin	<0.0080	
Endosulfan sulfate <0.0160 Endrin <0.0160 Endrin aldehyde <0.0160 Endrin ketone <0.0160 Heptachlor <0.0080 Heptachlor epoxide <0.0080 Methoxychlor <0.080 Toxaphene <0.160 Herbicides Method 8151 (mg/kg) Date of Analysis 01/22/05 2,4-D <0.010	Endosulfan I	< 0.0160	
Endrin	Endosulfan II	< 0.0160	
Endrin aldehyde	Endosulfan sulfate	< 0.0160	
Endrin ketone <0.0160  Heptachlor <0.0080  Heptachlor epoxide <0.0080  Methoxychlor <0.080  Toxaphene <0.160  Herbicides Method 8151 (mg/kg)  Date of Analysis 01/22/05  2,4-D <0.010	Endrin	<0.0160	
Heptachlor	Endrin aldeliyde	< 0.0160	
Heptachlor epoxide	Endrin ketone	< 0.0160	
Methoxychlor         <0.080	Heptachlor	<0.0080	
Toxaphene	Heptachlor epoxide	<0.0080	
Herbicides Method 8151 (mg/kg)     Date of Analysis   01/22/05     2,4-D     <0.010			
Date of Analysis         01/22/05           2,4-D         <0.010			
2,4-D <0.010	Herbicides Method 8151 (mg/l	kg)	
	Date of Analysis	01/22/05	
	2,4-D	< 0.010	
	2,4,5-TP (Silvex)	< 0.010	



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Client: GAIATECH, INC.

Project Number: 491/5000			
Sample ID WC-1 (Composite)			
Date Taken	01/17/05		
Time Taken 15:00			
Lab Sample ID	46762		
Metals Method 3050B/6010B	(mg/kg)		
Mercury Method 7470A (mg/kg)			
Date of Metals Analysis	01/20/05		
Date of Mercury Analysis	01/24/05		
Arsenic	10.9		
Barium	48.9		
Cadmium	0.8		
Chromium	9.2		
Lead	704		
Mercury	1.36		
Selenium	<0.2		
Silver 0.4			
TCLP Metals - Method 1311/6010B (mg/L)			
Mercury Method 1311/7470A (mg/L)			
Date of Metals Analysis	01/21/05		
Date of Mercury Analysis	01/24/05		
TCLP - Arsenic	0.004		
TCLP - Barium	<1.0		
TCLP - Cadmium	0.004		
TCLP - Chromium	0.003		
TCLP - Lead	0.166		
TCLP - Mercury	<0.0005		
TCLP - Sclenium	<0.002		
TCLP - Silver	<0.001		



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# **Analytical Report**

Client:

GAIATECH, INC.

Project ID:

49175000

Sample Number:

46762

Sample Description:

WC-1 (Composite)

Lab File ID:

46762

Date Received:

01/19/05

Date Taken: Time Taken: 01/17/05 15:00

Date Reported:

01/25/05

Analyte	Result	Units	Date Analyzed	Method
Cyanide, reactive	<10	mg/kg	01/21/05	7.3.3.2
Sulfide, reactive	<10	mg/kg	01/21/05	7.3.4.2
Phenols	<2.5	mg/kg	01/24/05	9065
Flash Point (open cup)	No Flash @	212°F	01/21/05	1010M
Paint Filter	Liquid Not Present		01/21/05	9095A
pH @ 25°C (1:10)	9.19	units	01/20/05	9045C



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# GAIATECH, INC.

Project I.D.: 49175000

Sample #	Sample ID	% Total Solids	
46762	WC-1 (Composite)	86.32	



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# **Analytical Report**

Client: GAIATECH, INC.

Project ID: 49175000 Date Received: 01/19/05
Sample Number: 46762 Date Taken: 01/17/05
Sample Description: WC-1 (Composite) Time Taken: 15:00
Lab File ID: 46762 Date Reported: 01/25/05

Analyte	Result	Units	Flags
immijec	1100410		

#### TCLP Volatile Organic Compounds Method 5030B/8260B

Analysis Date: 01/25/05

Веплепе	< 0.050	mg/L
Methyl ethyl ketone (MEK)	< 0.100	mg/L
Carbon tetrachloride	< 0.050	mg/L
Chlorobenzene	< 0.050	mg/L
Chloroform	< 0.050	mg/L
1,2-Dichloroethane	< 0.050	mg/L
1,1-Dichloroethene	< 0.050	mg/L
Tetrachloroethene	< 0.050	mg/L
Trichloroethene	< 0.050	mg/L
Vinyl Chloride	< 0.100	mg/L

### TCLP Base-Neutral/Acid Compounds Method 3510C/8270C

Analysis Date: 01/24/05

1,4-Dichlorobenzene	< 0.10	mg/L
2,4-Dinitrotoluene	< 0.10	mg/L
Hexachlorobenzene	< 0.10	mg/L
Hexachlorobutadiene	< 0.10	mg/L
Hexachloroethane	< 0.10	mg/L
o-Cresol	< 0.10	mg/L
m&p-Cresol	< 0.10	mg/L
Nitrobenzene	< 0.10	mg/L
Pentachlorophenol	< 0.50	mg/L
Pyridine	< 0.50	mg/L
2,4,5-Trichlorophenol	< 0.10	mg/L
2,4,6-Trichlorophenol	< 0.10	mg/L



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## **Analytical Report**

Client:

GAIATECH, INC.

Project ID:

Lab File ID:

49175000

Sample Number:

46762

Sample Description: WC-1 (Composite)

46762

2,4,5-TP (Silvex)

Date Received:

01/19/05

Date Taken: Time Taken: 01/17/05 15:00

Date Reported:

mg/L

< 0.5

01/25/05

Analyte		Result	Units	Flags
TCLP Pesticides Metho Analysis Date: 01	od 3510C/8081A 1/24/05			
Chlordane		< 0.005	mg/L	
Endrin		< 0.001	mg/L	
Heptachlor		< 0.005	mg/L	
Heptachlor Epoxide		< 0.005	mg/L	
Lindane		< 0.005	mg/L	
Methoxychlor		< 0.005	mg/L	
Toxaphene		< 0.01	mg/L	
TCLP Herbicides Meth Analysis Date: 01	nod 8321A 1/24/05			
2,4,-D		< 0.5	mg/L	

# CHAIN OF CUSTODY RECORD

Page\_\_\_ of \_\_\_ pgs

Euboratory, sire	Composition Calatech Inc	
First Environmental Laboratories	, Lasalle St,	
16W Shore Road, Suite D Nanerville, Illinois 60563	sure: #L zp: 60	0601
Phone: (630) 778-1200 • Fax: (630) 778-1233	Send Report To: L~12/2 Bc2-tSch	
E-mail: info@firstenv.com IEPA Certification# 100292	Anglycos	
Project I.D.: 4117 S600	1 / No. / No. / 1/2	
P.O. #.:	La Re Het RC Mother Para	
Matrix Codes: S = Soil W = Water O = Other	Mexel	
Sample Description	Comments	Lab I.D.
1/18/0 > 15/00 WC-1 (composite)  5	34 X X X X X X X X X X X X X X X X X X X	77.74
Cooler Temperature:C  Received within 6 hrs. of collection:		
Notes and Special Instructions:	- No previous per stan	
Inc Bet	Date/Time 1-14-05	06-120
Relinquished By Date/Time_	Received By: Date/Time	

Rev. 1/01

#### HIGH RESOLUTION GAMMA SPECTROSCOPY RSSI ANALYSIS TOTAL RADIUM (pCI/g) 345 EAST OHIO STREET CHICAGO, ILLINOIS

RSSI Spectrum File No.	STS Sample No.	Ra-226 (1)	Ra-228 <sup>(2)</sup>	Total Radium
043692	A-12	4.08	42.5	46.6
043691	P3-PG	4.05	15.9	20.0
043690	P1.G-RG	1.73	10.8	12.6

#### Notes:

- (1) Pb-214 used as surrogate for Ra-226 (2) Ac-228 measured as surrogate for Ra-228 (3) ND = below minimum detected activity

#### 

# RSSI High Resolution Gamma Spectroscopy Analysis

#### Quantum Technology GDR C Version 6.0

Sample ID: 043692 STS A-12 (C12)

Detector #: 1

Energy(keV) = -3.42 + 0.246\*Ch + 2.96e - 009\*Ch<sup>2</sup> + 0.00e + 000\*Ch<sup>3</sup> 00-00-00 00:00

#### PEAK SEARCH RESULTS

PK.	ENERGY	ADDRESS	NET	UN-	C.L.	BKG	FWHM		
#	(keV)	CHANNEL	COUNTS	CERTAINTY	COUNTS	COUNTS	(keV)	FLAG	
====									==
1	74.86		13285	266	483	14362	1.60		
2	77.09	327.33	19318	289	514	15523	1.27		
3	84.41	357.09	3158	238	479	11354	1.69		
4	87.20	368.41	9030	245	458				
5	89.90	379.39	5999	201	359				
6	93.37	393.52	5450	251	480	14852	1.40		
7	99.47	418.32	542	374	793	23592	1.30	e NET < C	L
8	105.43	142.51	915	377	810	20100	1.34	f	
9	115.17	482.12	1142	258	521	15761	1.14		
10	129.04	538.54	4555	298	593	19400	1.11		
11	154.02	640.07	2304	270	543	16317	1.15		
12	185.93	769.79	2236	251	503	13980	1.37		
13	209.15	864.21	7547	244	463	12455	1.30		
14	238.52	983.60	83675	358	432	9851	1.43	a	
15	240.77	992.75	10303	191	324	7008	1.95	b	
16	270.11	1112.05	6315	212	416	6889	1.46	a	
17	277.30	1141.27	3406	248	516	8953	1.47	b	
18	295.05	1213.44	3119	185	369	5927	1.54	a	
19	299.88	1233.08	4934	189	369	5924	1.48	b	
20	327.84	1346.72	4517	167	314	5191	1.44		
21	338.20	1388.85	17260	209	337	5470	1.43		
22	351.71	1443.78	5906	161	293	4327	1.40		
23	409.30	1677.90	2296	141	275	3788	1.34		
24	162.84	1895.55	4822	140	254	3090	1.48		
25	510.51	2089,34	8021	155	262	3308	1.55		
26	562.25	2299.70	825	112	225	2552	1.44		
27		2384.15	26767	202	247	2820	1.55		
28		2490.3B	4148	130	236	2463	1.67		
29		2969.99	6047	127	209	2008	1.71		
							<b>-</b>		

30	756 16	7007 07	700				
		3083.87	790	107	217	2011	1.63
31			379	97	198	1808	1.64
32			1059	94	184	1622	1.51
33	785.54	3207.40	628	95	192	1771	1.62
34		3245.23	3025	100	175	1354	1.69
35	830.52	3390.25	320	75	155	923	1.75 a
36	835.59	3410.88	1288	74	133	925	1.91 b
37		3429.27	674	76	151	880	1.79 c
38	860.44	3511.89	3223	92	150	1000	1.75
39	904.21	3689.80	342	85	178	1031	1.78 a
40	911.13	3717.94	18492	155	157	885	1.96 ъ
41	964.66	3935.55	3172	79	118	584	1.84 a
42	968.88	3952.69	10976	120	121	604	1.89 b
43	1078.95	4400.13	368	56	110	516	1.70
14	1094.47	4463.24	350	59	118	572	2.38
45	1120.45	456B.85	847	65	124	626	1.41
46	1238.63	5049.25	387	54	105	455	2.37
47	1460.06	5949.36	951	56	99	401	2.72
48	1495.88	6094.95	441	50	96	316	2.05 a
49	1501.51	6117.87	316	46	90	290	
50	1580.58	6439.25 \	229	56	117	368	2.20 b
51	1588.09	6469.79	1467	54	79		2.07 a
52		6486.69	910	46		277	2.06 b
53	1620.56		572		72	203	2.48 c
54		6642.50		54	102	442	1.80
55		7186.78	756	52	93	341	1.92
55	1104.48	/100./8	696	51	92	324	1.73

# RSSI High Resolution Gamma Spectroscopy Analysis

#### Quantum Technology GDR C Background Subtract Results

\_\_\_\_\_\_

Sample ID: 043692 STS A-12 (C12)

\_\_\_\_\_

Bkg File: . . . h:\gdr\bkg\nocal.bkg | Counting Start. . . . 12-16-04 13:07 ID.: . . NOCAL 24 Hour Background | Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	NEW NET COUNTS	NEW UN- CERTAINTY	FLAG
====				===========			
1	74.86	1.60	13285	266	13186	266	
3	<b>84.4</b> 1	1.69	3158	238	3133	238	
6	93.37	1.40	5450	251	5426	251	
12	185.93	1.37	2236	251	2201	251	
14	238.52	1.43	83675	358	83644	358	
18	295.05	1.54	3119	185	3101	185	
22	351.71	1.40	5906	161	5862	162	
25	510.51	1.55	8021	155	7926	155	
27	583.03	1.55	26767	202	26739	202	
28	609.16	1.67	4148	130	4101	130	
40	911.13	1.96	18492	155	18465	155	
42	968.88	1.89	10976	120	10960	120	
45	1120.45	1.41	847	65	828	65	
47	1460.06	2.72	951	56	765	56	
55	1764.48	1.73	696	51	675	51	

#### RSSI High Resolution Gamma Spectroscopy Analysis

# Ouantum Technology

# Quantum Technology GDR C Nuclide Activity Summary

#### Sample ID: 043692 STS A-12 (C12)

Sample Size . . . . . . 7.97e+002 g | Spectrum File . . H:\PCASPEC\043692.SPM

Sampling Start. . . .00-00-00 00:00 | Counting Start. . . . 12-16-04 13:07 Sampling Stop . . . .00-00-00 00:00 | Buildup Time. . . . . 0.00e+000 Hrs Current Date. . . .00-00-00 00:00 | Decay Time [OFF] . . . . 0.00e+000 Hrs

Eff.= 1/[7.40e-002\*En^-2.40e+000 + 7.40e+001\*En^9.80e-001] 02-23-04 17:00

Gamma Fraction Limit >= . . . 10.00 %  $\uparrow$  Decay Limit <= . . . 8.000 Halflives Library Energy Tolerance . . 1.20

#### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1.00sigma (uCi/g )	Halflife (hrs)	Peaks Found	
Pb-214 Ac-228	351.92 911.07	4.08e-006 +-1.12e-0 4.25e-005 +-3.56e-0		1 of 1 1 of 1	
TOTAL:		4.66e-005 uCi/g			

#### UNKNOWN PEAKS

Energy (keV)	Centroid Channel	Net Counts	Un⊢ Certainty	C.L. Counts	Bkg. Counts	FWHM (keV)	Net Gamma/sec	
74.86		13186	266	483	14362	1.60	1.578e+002	<b>-</b>
77.09	327.33	19318	289	514	15523	1.27	2.185e+002	
84.41	357.09	3133	238	479	11354	1.69	3.001e+001	
87.20	368.41	9030	245	458	12229	1.34	8.177e+001	
89.90	379.39	5999	201	359	10483	1.32	5.163e+001	
93.37	393.52	5426	251	480	14852	1.40	4.395e+001	
105.43	442.54	915	377	810	20100	1.34	6.236e+000	
115.17	482.12	1142	258	521	15761	1.14	7.025e+000	
129.04	538.54	4555	298	5 <b>9</b> 3	19400	1.11	2.534e+001	
154.02	640.07	2304	270	543	16317	1.15	1.179e+001	
185.93	769.79	2201	251	503	13980	1.37	1.126e+001	
209.15	B64.21	7547	244	463	12455	1.30	4.011e+001	
238.52	983.60	83644	358	432	9851	1.43	4.756e+002	
240.77	992.75	10303	191	324	7008	1.95	5.892e+001	
270.11	1112.05	6315	212	416	6889	1.46	3.900e+001	
277.30	1141.27	3406	248	51 <b>6</b>	8953	1.47	2.144e+001	
295.05	1213.44	3101	185	369	5927	1.54	2.047e+001	
299.88	1233.07	4934	189	369	5924	1.48	3.298e+001	

327.84	1346.72	4517	167	314	5191	1.44	3.248e+001
338.20	1388.85	17260	209	337	5470	1:43	1.274e+002
409.30	1677.90	2296	141	275	3788	1.34	2.007e+001
462.84	1895.56	4822	140	254	3090	1.48	4.722e+001
510.51	2089.34	7926	155	262	3308	1.55	8.512e+001
562.25	2299.70	825	112	225	2552	1.44	9.713e+000
583.03	2384.15	26739	202	247	2820	1.55	3.259e+002
609.16	2490.38	4101	130	236	2463	1.67	5.214e+001
727.14	2969.99	6047	127	209	2008	1.71	9.123e+001
755.15	3083.87	790	107	217	2011	1.63	1.236e+001
763.28	3116.91	379	97	198	1808	1.64	5.993e+000
772.24	3153.33	1059	94	184	1622	1.51	1.694e+001
785.54	3207.40	628	95	192	1771	1.62	1.021e+001
794.85	3245.24	3025	100	175	1354	1.69	4.976e+001
830.52	3390.25	320	75	155	923	1.75	5.494e+000
835.59	3410.88	1288	74	133	925	1.91	2.224e+001
840.12	3429.27	674	76	151	880	1.79	1.170e+001
860.44	3511.89	3223	92	150	1000	1.75	5.727e+001
904.21	3689.80	342	85	178	1031	1.78	6.378e+000
964.66	3935.55	3172	79	118	584	1.84	6.301e+001
968.88	3952.69	10960	120	121	604	1.89	2.187e+002
1078.95	4400.13	368	56	110	516	1.70	B.156e+000
1094.47	4463.24	350	59	118	572	2.38	7.866e+000
1120.45	4568.85	828	65	124	626	1.41	1.904e+001
1238.63	5049.25	387	54	105	455	2.37	9.816e+000
1460.06	5949.36	765	56	99	401	2.72	2.279e+001
1495.88	6094.95	441	50	96	316	2.05	1.345e+001
1501.51	6117.87	316	46	90	290	2.20	9.677e+000
1580.58	6439.25	229	56	117	368	2.07	7.374e+000
1588.09	6469.79	1467	54	79	277	2.06	4.746e+001
1592.25	6486.69	910	46	72	203	2.48	2.951e+001
1620.56	6601.78	572	54	102	442	1.80	1.887e+001
1630.58	6642.50	756	52	93	341	1.92	2.510e+001
1764.48	7186.78	675	51	92	324	1.73	2.421e+001

.

### RSSI High Resolution Gamma Spectroscopy Analysis

## 

## Quantum Technology GDR\_C Version 6.0

Sample ID : 043691 ST	rs P3-PG (C5)	)
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Sample Size 7.	59e+002 g   Spectru	m File h:\pcaspec\043691.spm
Sampling Start	-00 00:00   Counting	g Start 12-16-04 11:15
Sampling Stop	-00 00:00   Live Time	me 3600 Sec
Current Date	-00 00:00   Real Time	me 0 Sec

Detector #: 1

Energy(keV) = -3.42 + 0.246\*Ch + 2.96e - 009\*Ch<sup>2</sup> + 0.00e + 000\*Ch<sup>3</sup> 00-00-00 00:00

FWHM(keV) =  $1.33 + 0.030*En + 0.00e+000*En^2 + 0.00e+000*En^3 00-00-00 00:00$ Where En = Sqrt(Energy in keV)

Sensitivity . . . . . . . . . . 2.00 | Search Start / End. . . . . 0 / 8191 Sigma Multiplier. . . . . . . . 1.00 |

### PEAK SEARCH RESULTS

1 74.81 318.07 5477 162 288 5594 1.55 a 2 77.05 327.16 7535 172 297 5820 1.27 b 3 87.15 368.23 2915 173 341 5694 1.34 a 4 90.04 379.98 1531 133 248 4700 1.29 b 5 93.36 393.46 1458 161 313 6350 1.40 c 6 99.54 418.61 333 238 507 8680 1.41 d NET < CL 7 105.25 441.80 660 159 318 6228 1.57 8 128.92 538.05 1631 164 319 6622 1.20 9 154.04 640.14 610 186 379 7553 1.41 10 186.04 770.24 1504 156 307 5491 1.27 11 209.17 864.30 2780 166 324 5516 1.36 12 238.52 983.62 30203 218 271 3863 1.43 a 13 241.22 994.58 3809 126 222 3053 1.45 b 14 270.11 112.03 2667 137 268 278 1.54 a 15 277.24 1141.04 1369 158 330 3580 1.55 b 16 295.05 1213.44 3255 130 245 2526 1.47 a 17 299.94 1233.32 1834 117 226 2290 1.49 b 18 327.82 1346.66 1675 107 205 2108 1.52 19 338.18 1388.78 6027 132 221 2354 1.33 20 351.74 1443.90 5623 120 192 1936 1.39 21 409.28 1677.80 843 100 201 3788 1.54 22 462.77 1895.25 1788 88 162 1204 1.60 23 510.50 2089.29 2943 101 179 1413 1.42 24 562.47 2300.57 338 71 142 1012 1.84 25 583.02 2384.10 9304 120 149 1070 1.56	PK. ∰	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV) FLAG	
2       77.05       327.16       7535       172       297       5820       1.27 b         3       87.15       368.23       2915       173       341       5694       1.34 a         4       90.04       379.98       1531       133       248       4700       1.29 b         5       93.36       393.46       1458       161       313       6350       1.40 c         6       99.54       418.61       333       238       507       8680       1.41 d NET < CL	====	=======				=======================================			-===
3       87.15       368.23       2915       173       341       5694       1.34 a         4       90.04       379.98       1531       133       248       4700       1.29 b         5       93.36       393.46       1458       161       313       6350       1.40 c         6       99.54       418.61       333       238       507       8680       1.41 d NET < CL									
4       90.04       379.98       1531       133       248       4700       1.29 b       5         5       93.36       393.46       1458       161       313       6350       1.40 c       6         6       99.54       418.61       333       238       507       8680       1.41 d NET < CL									
5       93.36       393.46       1458       161       313       6350       1.40 c         6       99.54       418.61       333       238       507       8680       1.41 d NET < CL									
6 99.54 418.61 333 238 507 8680 1.41 d NET < CL 7 105.25 441.80 660 159 318 6228 1.57 8 128.92 538.05 1631 164 319 6622 1.20 9 154.04 640.14 610 186 379 7553 1.41 10 186.04 770.24 1504 156 307 5491 1.27 11 209.17 864.30 2780 166 324 5516 1.36 12 238.52 983.62 30203 218 271 3863 1.43 a 13 241.22 994.58 3809 126 222 3053 1.45 b 14 270.11 1112.03 2667 137 268 2778 1.54 a 15 277.24 1141.04 1369 158 330 3580 1.55 b 16 295.05 1213.44 3255 130 245 2526 1.47 a 17 299.94 1233.32 1834 117 226 2290 1.49 b 18 327.82 1346.66 1675 107 205 2108 1.52 19 338.18 1388.78 6027 132 221 2354 1.33 20 351.74 1443.90 5623 120 192 1936 1.39 21 409.28 1677.80 843 100 201 3788 1.54 22 462.77 1895.25 1788 88 162 1204 1.60 23 510.50 2089.29 2943 101 179 1413 1.42 24 562.47 2300.57 338 71 142 1012 1.84									
7       105.25       441.80       660       159       318       6228       1.57         8       128.92       538.05       1631       164       319       6622       1.20         9       154.04       640.14       610       186       379       7553       1.41         10       186.04       770.24       1504       156       307       5491       1.27         11       209.17       864.30       2780       166       324       5516       1.36         12       238.52       983.62       30203       218       271       3863       1.43       a         13       241.22       994.58       3809       126       222       3053       1.45       b         14       270.11       1112.03       2667       137       268       2778       1.54       a         15       277.24       1141.04       1369       158       330       3580       1.55       b         16       295.05       1213.44       3255       130       245       2526       1.47       a         17       299.94       1233.32       1834       117       226       2290									
8       128.92       538.05       1631       164       319       6622       1.20         9       154.04       640.14       610       186       379       7553       1.41         10       186.04       770.24       1504       156       307       5491       1.27         11       209.17       864.30       2780       166       324       5516       1.36         12       238.52       983.62       30203       218       271       3863       1.43       a         13       241.22       994.58       3809       126       222       3053       1.45       b         14       270.11       1112.03       2667       137       268       2778       1.54       a         15       277.24       1141.04       1369       158       330       3580       1.55       b         16       295.05       1213.44       3255       130       245       2526       1.47       a         17       299.94       1233.32       1834       117       226       2290       1.49       b         18       327.82       1346.66       1675       107       205		99.54	418.61	333	238	507	8680	1.41 d NET <	CL
9 154.04 640.14 610 186 379 7553 1.41 10 186.04 770.24 1504 156 307 5491 1.27 11 209.17 864.30 2780 166 324 5516 1.36 12 238.52 983.62 30203 218 271 3863 1.43 a 13 241.22 994.58 3809 126 222 3053 1.45 b 14 270.11 1112.03 2667 137 268 2778 1.54 a 15 277.24 1141.04 1369 158 330 3580 1.55 b 16 295.05 1213.44 3255 130 245 2526 1.47 a 17 299.94 1233.32 1834 117 226 2290 1.49 b 18 327.02 1346.66 1675 107 205 2108 1.52 19 338.18 1388.78 6027 132 221 2354 1.33 20 351.74 1443.90 5623 120 192 1936 1.39 21 409.28 1677.80 843 100 201 1788 1.54 22 462.77 1895.25 1788 88 162 1204 1.60 23 510.50 2089.29 2943 101 179 1413 1.42 24 562.47 2300.57 338 71 142 1012 1.84	-	105.25	441.80	660	159	318	6228	1.57	
10       186.04       770.24       1504       156       307       5491       1.27         11       209.17       864.30       2780       166       324       5516       1.36         12       238.52       983.62       30203       218       271       3863       1.43       a         13       241.22       994.58       3809       126       222       3053       1.45       b         14       270.11       1112.03       2667       137       268       2778       1.54       a         15       277.24       1141.04       1369       158       330       3580       1.55       b         16       295.05       1213.44       3255       130       245       2526       1.47       a         17       299.94       1233.32       1834       117       226       2290       1.49       b         18       327.82       1346.66       1675       107       205       2108       1.52         19       338.18       1388.78       6027       132       221       2354       1.33         20       351.74       1443.90       5623       120       192	8	128.92	538.05	1631	164	319	6622	1.20	
11       209.17       864.30       2780       166       324       5516       1.36         12       238.52       983.62       30203       218       271       3863       1.43       a         13       241.22       994.58       3809       126       222       3053       1.45       b         14       270.11       1112.03       2667       137       268       2778       1.54       a         15       277.24       1141.04       1369       158       330       3580       1.55       b         16       295.05       1213.44       3255       130       245       2526       1.47       a         17       299.94       1233.32       1834       117       226       2290       1.49       b         18       327.82       1346.66       1675       107       205       2108       1.52         19       338.18       1388.78       6027       132       221       2354       1.33         20       351.74       1443.90       5623       120       192       1936       1.39         21       409.28       1677.80       843       100       201	9	154.04	640.14	610	186	379	7553	1.41	
12     238.52     983.62     30203     218     271     3863     1.43 a       13     241.22     994.58     3809     126     222     3053     1.45 b       14     270.11     1112.03     2667     137     268     2778     1.54 a       15     277.24     1141.04     1369     158     330     3580     1.55 b       16     295.05     1213.44     3255     130     245     2526     1.47 a       17     299.94     1233.32     1834     117     226     2290     1.49 b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142	10	186.04	770.24	1504	156	307	5491	1.27	
13     241.22     994.58     3809     126     222     3053     1.45 b       14     270.11     1112.03     2667     137     268     2778     1.54 a       15     277.24     1141.04     1369     158     330     3580     1.55 b       16     295.05     1213.44     3255     130     245     2526     1.47 a       17     299.94     1233.32     1834     117     226     2290     1.49 b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	11	209.17	864.30	2780	166	324	5516	1.36	
14     270.11     1112.03     2667     137     268     2778     1.54     a       15     277.24     1143.04     1369     158     330     3580     1.55     b       16     295.05     1213.44     3255     130     245     2526     1.47     a       17     299.94     1233.32     1834     117     226     2290     1.49     b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     3788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	12	238.52	983.62	30203	218	271	3863	1.43 a	
15     277.24     1143.04     1369     158     330     3580     1.55 b       16     295.05     1213.44     3255     130     245     2526     1.47 a       17     299.94     1233.32     1834     117     226     2290     1.49 b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     3788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	13	241.22	994.58	3809	126	222	3053	1.45 b	
16     295.05     1213.44     3255     130     245     2526     1.47 a       17     299.94     1233.32     1834     117     226     2290     1.49 b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	14	270.11	1112.03	2667	137	268	2778	1.54 a	
17     299.94     1233.32     1834     117     226     2290     1.49 b       18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	15	277.24	1143.04	1369	158	330	3580	1.55 b	
18     327.82     1346.66     1675     107     205     2108     1.52       19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	16	295.05	1213.44	3255	130	245	2526	1.47 a	
19     338.18     1388.78     6027     132     221     2354     1.33       20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	17	299.94	1233.32	1834	117	226	2290	1.49 b	
20     351.74     1443.90     5623     120     192     1936     1.39       21     409.28     1677.80     843     100     201     1788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	18	327.82	1346.66	1675	107	205	2108	1.52	
21     409.28 1677.80     843     100     201     1788     1.54       22     462.77 1895.25     1788     88     162     1204     1.60       23     510.50 2089.29     2943     101     179     1413     1.42       24     562.47 2300.57     338     71     142     1012     1.84	19	338.18	1388.78	6027	132	221	2354	1.33	
21     409.28     1677.80     843     100     201     3788     1.54       22     462.77     1895.25     1788     88     162     1204     1.60       23     510.50     2089.29     2943     101     179     1413     1.42       24     562.47     2300.57     338     71     142     1012     1.84	20	351.74	1443.90	5623	120	192	1936	1.39	
23 510.50 2089.29 2943 101 179 1413 1.42 24 562.47 2300.57 338 71 142 1012 1.84	21	409.28	1677.80	843	100		3788	1.54	
23 510.50 2089.29 2943 101 179 1413 1.42 24 562.47 2300.57 338 71 142 1012 1.84	22	462.77	1895.25	1788	88	162	1204	1.60	
	23	510.50	2089.29	2943	101				
25 583.02 2384 10 9304 120 149 1070 1.56	24	562.47	2300.57	338	71			1.84	
	25	583.02	2384.10	9304	120	149	1070	1.56	
26 609.15 2490.32 4053 95 148 1012 1.60									
27 727.07 2969.72 2074 76 127 774 1.65									
28 754.93 3082.95 268 69 142 858 1.40					_		_		
29 768.19 3136.88 369 53 102 509 1.73 a	29	768.19	3136.88	-					

30	772.29	3153.55	426	51	96	472	2.06 b
31	785.66	3207.88	324	55	109	594	1.48
32	794.78	3244.95	1060	64	116	576	1.73
33	835.37	3409.96	276	51	100	525	1.40
34	860.40	3511.71	1052	58	102	463	1.58
35	911.11	3717.85	6625	95	102	442	1.76
36		3935.31	1208	47	67	213	1.84 a
37		3952.57	3817	73	83	277	1.87 b
38	1078.65	4398.93	161	35	68	212	1.85
39	1120.31	4568.28	817	49	83	290	1.92
40	1237.97		264	43	83	284	1.17
41	1377.62	5614.26	212	36	70	208	2.19
42	1460.56	5951.37	899	44	69	184	2.11
43	1588.21		507	38	66	162	2.02 a
44	1592.26	6486.72	276	29	50	115	2.42 b
45	1620.60	6601.95	205	35	68	182	2.12
46	1630.54	6642.34	283	30	51	113	2.85
47	1764.44	7186.61	699	40	62	154	2.02

.

# RSSI High Resolution Gamma Spectroscopy Analysis

## Quantum Technology GDR C Background Subtract Results

Sample ID: 043691 STS P3-PG (C5)

Bkg File: . . . h:\gdr\bkg\nocal.bkg ! Counting Start. . . . 12-16-04 11:15 ID.: . . NOCAL 24 Hour Background ! Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)		OLD UN- CERTAINTY	NEW NET		FLAG
1	74.81	1.55	5477	162	5383	162	
5	93.36	1.40	1458	161	1434	161	
10	186.04	1.27	1504	156	1469	156	
12	238.52	1.43	30203	218	30172	218	
16	295.05	1.47	3255	130	3238	130	
20	351.74	1.39	5623	120	5579	120	
23	510.50	1.42	2943	101	2848	101	
25	583.02	1.56	9304	120	9276	120	
26	609.15	1.60	4053	95	4006	95	
35	911.11	1.76	6625	95	6598	95	
37	968.85	1.87	3817	73	3801	73	
39	1120.31	1.92	817	49	798	49	
42	1460.56	2.11	899	44	713	44	
47	1764.44	2.02	699	40	678	40	

# RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology GDR\_C Nuclide Activity Summary

# Sample ID: 043691 STS P3-PG (C5)

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Sample Size 7.59e+002 g   Spectrum File h:\pcaspec\043691.spm Sampling Start
Efficiency File.h:\gdr\eff\500mar.eff   Library File h:\gdr\lib\ra2nrg.lib ID
Eff.= 1/[7.40e-002*En^-2.40e+000 + 7.40e+001*En^9.80e-001] 02-23-04 17:00
Gamma Fraction Limit >= 10.00 %   Decay Limit <= 8.000 Halflives Library Energy Tolerance 1.20

### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- (uCi/g	1.00sigma )	Halflife (hrs)	Peal Four	
Pb-214 Ac-228	351.92 911.07		+-8.75e-008 +-2.29e-007	<b>-</b>	1 of 1 of	1
TOTAL:		2.00e-005	uCi/g			

# UNKNOWN PEAKS

	Centroid	Net	Un-	C.L.	Bkg.	FWHM	Net
(keV)	Channel	Counts	Certainty	Counts	Counts	(keV) 	Gamma/sec
74.81	318.07	5383	162	288	5594	1.55	6.449e+001
77.05	327.16	7535	172	297	5820	1.27	8.530e+001
87.15	368.23	2915	173	341	5694	1.34	2.642e+001
90.04	379.98	1531	133	248	4700	1.29	1.314e+001
93.36	393.46	1434	161	313	6350	1.40	1.162e+001
105.25	441.80	660	159	318	6228	1.57	1.508e+000
128.92	538.05	1631	164	319	6622	1.20	9.080e+000
154.04	640.15	610	186	379	7553	1.41	3.122e+000
186.04	770.24	1469	156	307	5491	1.27	7.519e+000
209.17	864.30	2780	166	324	5516	1.36	1.478e+001
238.52	983.62	30172	218	271	3863	1.43	1.716e+002
241.22	994.58	3809	126	222	3053	1.45	2.181e+001
270.11	1112.03	2667	137	268	2778	1.54	1.647e+001
277.24	1141.04	1369	158	330	3580	1.55	8.616e+000
295.05	1213.44	3238	130	245	2526	1.47	2.137e+001
299.94	1233.32	1834	117	226	2290	1.49	1.226e+001
327.82	1346.66	1675	107	205	2108	1.52	1.204e+001
338.18	1388.78	6027	132	221	2354	1.33	4.449e+001

1677 80	843	100	201	1700	1 64	7 260-1000
						7.368e+000
						1.751e+001
						3.058e+001
						3.981e+000
			149	1070	1.56	1.131e+002
		95	148	1012	1.60	5.093e+001
2969.72	2074	76	127	774	1.65	3.129e+001
3082.95	268	69	142	858	1.40	4.193e+000
3136.88	369	53	102	509	1.73	5.872e+000
3153.55	426	51	96	472	2.06	6.814e+000
3207.88	324	55	109	594		5.270e+000
3244.95	1060	64	116			1.743e+001
3409.96	276		100			4.765e+000
3511.71	1052		102			1.869e+001
3935.31	1208	47				2.400e+001
3952.57	3801	73				7.583e+001
4398.92	161	35	68			3.567e+000
4568.28	798	49	83			1.835e+001
5046.57	264	43				6.693e+000
5614.26	212	36				5.967e+000
5951.37	713	44				2.125e+001
6470.26	507	38				1.640e+001
6486.72	276					8.952e+000
6601.94						
						6.765e+000
						9.395e+000
1100.01	0/8	40	62	154	2.02	2.432e+001
	3153.55 3207.88 3244.95 3409.96 3511.71 3935.31 3952.57 4398.92 4568.28 5046.57 5614.26 5951.37 6470.26	1895.25       1788         2089.29       2848         2300.57       338         2384.10       9276         2490.32       4006         2969.72       2074         3082.95       268         3136.88       369         3153.55       426         3207.88       324         3244.95       1060         3409.96       276         3511.71       1052         3935.31       1208         3952.57       3801         4398.92       161         4568.28       798         5046.57       264         5614.26       212         5951.37       713         6470.26       507         6486.72       276         6601.94       205         6642.34       283	1895.25       1788       88         2089.29       2848       101         2300.57       338       71         2384.10       9276       120         2490.32       4006       95         2969.72       2074       76         3082.95       268       69         3136.88       369       53         3153.55       426       51         3207.88       324       55         3244.95       1060       64         3409.96       276       51         3511.71       1052       58         3935.31       1208       47         3952.57       3801       73         4398.92       161       35         4568.28       798       49         5046.57       264       43         5614.26       212       36         5951.37       713       44         6470.26       507       38         6486.72       276       29         6601.94       205       35         6642.34       283       30	1895.25       1788       88       162         2089.29       2848       101       179         2300.57       338       71       142         2384.10       9276       120       149         2490.32       4006       95       148         2969.72       2074       76       127         3082.95       268       69       142         3136.88       369       53       102         3153.55       426       51       96         3207.88       324       55       109         3244.95       1060       64       116         3409.96       276       51       100         3511.71       1052       58       102         3935.31       1208       47       67         3952.57       3801       73       83         4398.92       161       35       68         4568.28       798       49       83         5046.57       264       43       83         5614.26       212       36       70         5951.37       713       44       69         6486.72       276       29	1895.25       1788       88       162       1204         2089.29       2848       101       179       1413         2300.57       338       71       142       1012         2384.10       9276       120       149       1070         2490.32       4006       95       148       1012         2969.72       2074       76       127       774         3082.95       268       69       142       858         3136.88       369       53       102       509         3153.55       426       51       96       472         3207.88       324       55       109       594         3244.95       1060       64       116       576         3409.96       276       51       100       525         3511.71       1052       58       102       463         3935.31       1208       47       67       213         3952.57       3801       73       83       277         4398.92       161       35       68       212         4568.28       798       49       83       290         5046.57	1895.25       1788       88       162       1204       1.60         2089.29       2848       101       179       1413       1.42         2300.57       338       71       142       1012       1.84         2384.10       9276       120       149       1070       1.56         2490.32       4006       95       148       1012       1.60         2969.72       2074       76       127       774       1.65         3082.95       268       69       142       858       1.40         3136.88       369       53       102       509       1.73         3153.55       426       51       96       472       2.06         3207.88       324       55       109       594       1.48         3244.95       1060       64       116       576       1.73         3409.96       276       51       100       525       1.40         3511.71       1052       58       102       463       1.58         3935.31       1208       47       67       213       1.84         3982.57       3801       73       83       277 </td

# RSSI High Resolution Gamma Spectroscopy Analysis

### Quantum Technology GDR C Version 6.0

Sample	ΙD	:	043690	STS	P1	. G-RG	(C8)	)
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### Detector #: 1

Energy  $\{keV\}$  = -3.42 + 0.246\*Ch + 2.96e-009\*Ch^2 + 0.00e+000\*Ch^3 00-00-00 00:00

FWHM(keV) =  $1.33 + 0.030*En + 0.00e+000*En^2 + 0.00e+000*En^3 00-00-00 00:00$ Where En = Sqrt(Energy in keV)

#### PEAK SEARCH RESULTS

PK.	ENERGY (keV)	ADDRESS CHANNEL		UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
	ze=== <del>-</del>							
1	74.79		3801	149	270	4918	1.38	-
2	77.07	327.26	6312	160	277	5072	1.27	
3	84.40	357.04	854	150	304	4445	1.66	
4	87.20	368.41	2785	141	263	4434	1.32	
5	89.90	379.39	1832	116	207	3792	1.32	
6	93.39	393.60	1755	158	307	5672	1.35	
7	99.63	418.97	69	243	52 <b>5</b>	8160		e NET < CL
8	105.26	441.85	585	145	287	5369	1.43	
9	129.02	53B.44	1590	191	386	7487	1.16	
10	154.02	640.06	524	164	332	6100	1.46	
11	186.19	770.88	998	152	304	5100	1.53	
12	209.21	864.46	2280	142	273	4332	1.22	
13	238.62	984.03	25074	201	256	3318	1.43	a
14	240.98	993.59	3461	124	221	2803	1.75	ь
15	270.08	1111.91	2038	128	254	2508	1.57	a
16	277.31	1141.29	967	150	314	3247	1.46	b .
17	295.12	1213.72	1458	118	235	2301	1.49	a
18	300.04	1233.72	1363	113	224	2171	1.48	b
19	327.92	1347.03	1287	101	195	1910	1.25	
20	338.19	1388.80	5228	117	191	1830	1.39	
21	351.75	1443.91	2964	99	171	1474	1.43	
22	409.24	1677.63	751	80	155	1214	1.66	
23	462.85	1895.57	1578	80	145	1008	1.57	
24	510.50	2089.29	2788	92	158	1100	1.53	
25	583.05	2384.22	7954	114	149	1024	1.58	
26	609.19	2490.50	2178	77	127	778	1.71	
27	727.16	2970.07	1816	70	115	633	1.78	
28	755.08	3083.57	264	58	116	620	1.24	
29	772.33	3153.71	276	55	108	564	1.31	

30	794.78	3244.96	912	56	99	452	1.51
31	835.56	3410.74	289	46	89	417	1.52
32	860.38	3511.66	918	51	85	336	1.38
33	911.07	3717.70	5557	85	85	317	1.69
34	964.62	3935.40	957	46	70	222	1.80 a
35	968.86	3952.62	3341	69	78	254	1.88 b
36	1120.19	4567.78	441	45	86	302	1.98
37	1238.05	5046.89	171	38	77	233	1.83
38	1460.57	5951.44	996	42	60	140	1.92
39	1495.89	6095.03	175	24	41	75	1.00
40	1587.97	6469.30	450	32	49	101	2.02 a
41	1592.37		253	27	46	93	2.29 b
42	1620.70	6602.34	168	31	60	152	2.27
43	1630.59	6642.54	213	30	55	126	1.73
44	1764.47	7186.76	371	30	47	89	2.10

.

## RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology

# GDR\_C Background Subtract Results

Sample ID: 043690 STS P1.G-RG (C8)

Bkg File: . . . h:\gdr\bkg\nocal.bkg | Counting Start. . . . . 12-16-04 10:11 ID.: . . NOCAL 24 Hour Background | Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	NEW NET	NEW UN- CERTAINTY	FLAG
1	74.79	1.38	3801	149	3714	149	
3	84.40	1.66	854	150	830	150	
6	93.39	1.35	1755	158	1732	158	
11	186.19	1.53	998	152	963	152	
13	238.62	1.43	25074	201	25042	201	
17	295.12	1.49	1458	118	1440	118	
21	351.75	1.43	2964	99	2920	99	
24	510.50	1.53	2788	92	2693	92	
25	583.05	1.58	7954	114	7926	114	
26	609.19	1.71	2178	77	2131	77	
33	911.07	1.69	5557	85	5530	85	
35	968.86	1.88	3341	69	3325	69	
36	1120.19	1.98	441	45	422	46	
38	1460.57	1.92	996	42	810	42	
44	1764.47	2.10	371	30	350	30	

# RSSI High Resolution Gamma Spectroscopy Analysis

## Quantum Technology GDR C Nuclide Activity Summary

# Sample ID: 043690 STS Pl.G-RG (C8)

Sample Size 9.36e+002 g   Spectrum File H:\PCASPEC\043690.SPM
Sampling Start
Sampling Stop
Current Date00-00-00 00:00   Decay Time [OFF] 0.00e+000 Hrs
Efficiency File.h:\gdr\eff\500mar.eff   Library File h:\gdr\lib\ra2nrg.lib
ID
Eff.= 1/[7.40e-002*En^-2.40e+000 + 7.40e+001*En^9.80e-001] 02-23-04 17:00
Gamma Fraction Limit >= 10.00 %   Decay Limit <= 8.000 Halflives Library Energy Tolerance 1.20

### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	(uCi/g	1.00sigma )	Halflife (hrs)	Pea Fou	and	
Pb-214 Ac-228	351.92 911.07	1.73e-006	+-5.88e-008 +-1.66e-007	4.47e-001	l of l of	1 1	
TOTAL:		1.26e-005	uCi/g				

### UNKNOWN PEAKS

Energy (keV)	Centroid Channel		Un- Certainty		Bkg. Counts	FWHM (keV)	Net Gamma/sec
74.79	317.99	3714	149	270	4918	1.38	4.452e+001
77.07	327.26	6312	160	277	5072	1.27	7.141e+001
84.40	357.04	830	150	304	4445	1.66	7.952e+000
87.20	368.41	2785	141	263	4434	1.32	2.522e+001
89.90	379.39	1832	116	207	3792	1.32	1.577e+001
93.39	393.60	1732	158	307	5672	1.35	1.402e+001
105.26	441.85	585	145	287	5369	1.43	3.995e+000
129.02	538.44	1590	191	386	7487	1.16	8.847e+000
154.02	640.06	524	164	332	6100	1.46	2.682e+000
186.19	770.88	963	152	304	5100	1.53	4.930e+000
209.21	864.46	2280	142	273	4332	1.22	1.212e+001
238.62	984.03	25042	201	256	3318	1.43	1.424e+002
240.98	993.59	3461	124	221	2803	1.75	1,980e+001
270.08	1111.91	2038	128	254	2508	1.57	1.258e+001
277.31	1141.29	967	150	314	3247	1.46	6.087e+000
295.12	1213.72	1440	118	235	2301	1.49	9.505e+000
300.04	1233.72	1363	113	224	2171	1.48	9.115e+000
327.92	1347.04	1287	101	195	1910	1.25	9.255e+000

338.19	1388.80	5228	117	191	1830	1.39	3.859e+Q01
409.24	1677.63	751	80	155	1214	1.66	6.563e+000
462.85	1895.57	1578	80	145	1008	1.57	1.545e+001
510.50	2089.29	2693	92	158	1100	1.53	2.892e+001
583.05	2384.22	7926	114	149	1024	1.58	9.662e+001
609.19	2490.50	2131	77	127	778	1.71	2.709e+001
727.16	2970.07	1816	70	115	633	1.78	2.740e+001
755.08	3083.56	264	58	116	620	1.24	4.131e+000
772.33	3153.71	276	55	108	564	1.31	4.415e+000
794.78	3244.96	912	56	99	452	1.51	1.500e+001
835.56	3410.74	289	46	89	417	1.52	4.991e+000
860.38	3511.66	918	51	85	336	1.38	1.631e+001
964.62	3935.40	957	46	70	222	1.80	1.901e+001
968.86	3952.62	3325	69	78	254	1.88	6.633e+001
1120.19	4567.78	422	46	86	302	1.98	9.702e+000
1238.05	5046.89	171	38	77	233	1.83	4.335e+000
1460.57	5951.44	810	42	60	140	1.92	2.414e+001
1495.89	6095.03	175	24	41	75	1.00	5.339e+000
1587.97	6469.30	450	32	49	101	2.02	1.456e+001
1592.37	6487.19	253	27	46	93	2.29	8.206e+000
1620.70	6602.34	168	31	60	152	2.27	5.544e+000
1630.59	6642.54	213	30	55	126	1.73	7.071e+000
1764.47	7186.76	350	30	47	89	2.10	1.255e+001

RSSI High Resolution Garma Spectroscopy Analysis
Quantum Technology  GDR_C Nuclide Activity Summary
Sample ID: C43728 STS 25585XM A-12 6'0" 71%
Sample Size 8.25e+002 g   Spectrum File . H:\PCASPEC\043728.SPM Sampling Start
Current Date Decay Time [OFF]

Gamma Fraction Limit >= . . .71.00 % | Decay Limit <= . . . 8.000 Halflives Library Energy Tolerance . . 1.20

Eff.= 1/[7.40e-002\*En^-2.40e+000 + 7.40e+001\*En^9.80e-001] 02-23-04 17:00

### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- 1 (uCi/g	L.00sigma )	Halflife (hrs)		
	=======================================					220 <b>2</b> 2020
⊋b-212	Average:	4.78e-007 +	-1.73e-008	1.06e+001	5 of	6
	74.82	4.78e-007 +	1.25e-007			
	77.11	4.78e-007 +	8.40e-008			
	87.30	4.14e-007 +	1,4Be-007			
	238.63	4.78e-0D7 +	-1.80e-008			
	300.09	5.72e-007 +	-1.85e-0C7			
Pb-214	Average:	6.58e-007 +	-1.78e~GC8	4.47e-C01	5 of	7
	74-82	3.39e-007 +	-2.15e-CC7			
	77.11	6.35e-007 +	-1.45e-C07			
	241.98	6.35e-007 +	-7.60e-008			
	295.21	7.33e-007 +	-3.60e-008			
	351.92	6.36e-007 +	-2.17e-008			
Ra-226	186.10		I.D.Only	1.40e+007	1 of	1
Ra-224	240.98	4.78e-007 +	-1.44e-007	8.69e+001	1 of	1
K-40	1460.80	8.39e-006 +	-2.35e-007	1.12e+013	1 of	1
TOTAL:		1.00e-005 u	ıCi/g			

### UNKNOWN PEAKS

Energy	Centroid	Net	Un-	C.L.	Вkg.	FWHM	Net
(keV)	Charnel	Counts	Certainty	Counts	Counts	(keV)	Gamma/sec
=======		======	z==========			== <b>===</b> =	=======================================
92.94	391.76	490	- 86	165	1662	1.44	1.999e+000
338.13	1388.58	533	57	108	587	1.22	1.967e+000
510.51	2089.35	213	51	97	387	1.99	1.144e+000
582.95	2383.82	781	44	67	224	1.61	4.759e+000
609.10	2490.13	1253	51	74	261	1.48	7.954e+000

726.76	2963.46	175	32	60	183	1.48	1.319e+000
910.95	3717.24	504	37	60	158	1.51	4.734e+000
968.75	3952.19	242	34	62	176	1.24	2.414e+000
1120.09	4567.38	281	32	56	138	2.24	3.230e+000
1764.36	7186.29	236	21	28	32	1.60	4.232e+000

RSSI High Resolution Gamma Spectroscopy Analysis
Quantum Technology GDR_C Version 6.0
Sample ID : 043728 STS 25585XM A-12 6'0' 71%
Sample Size 8.25e+002 g   Spectrum File . H:\PCASPEC\043728.SPM Sampling Start
Detector #: 1 Energy(keV) = -3.42 + 0.246*Ch + 2.96e-009*Ch^2 + 0.00e+000*Ch^3 00-00-00 00:00
FWHM(keV) = 1.33 + 0.030*En + 0.00e+000*En^2 + 0.00e+000*En^3 00-00-00 00:00 Where En = Sqrt(Energy in keV)

### PEAK SEARCH RESULTS

Sensitivity . . . . . . . . 2.00 | Search Start / End. . . . . 0 / 8191 Sigma Multiplier. . . . . . . 1.00 |

PX.	ENERGY	ADDRESS	NET	UN-	C.L.	BKG	FWHM	
<b>#</b>	(keV)	CHANNEL	COUNTS	CERTAINTY	COUNTS	COUNTS	(keV)	FLAG
====	=======	=======	=======				=====	
1	74.70	317.62	523	67	123	. 1205	1.27	a
2	77.03	327.08	855	81	152	1553	1.36	ь
3	87.13	368,16	224	80	158	1840	0.83	
4	92.94	391.76	569	85	165	1662	1.44	
5	185.87	769.55	582	83	161	1514	1.25	
6	238.47	983.40	2351	86	146	1083	1.43	a
7	241.56	995.96	708	61	109	768	1.79	b
8	295.00	1213.23	1339	64	109	521	1.48	a
9	300,00	1233.55	178	58	118	576	1.48	b
10	338.13	1388.58	533	57	108	587	1.22	
11	351.69	1443.68	1981	64	94	487	1.40	
12	510.51	2089.35	402	50	97	387	1.99	
13	582.95	2383.82	838	43	67	224	1.61	
14	609.10	2490.13	1348	51	74	261	1.48	
15	726.76	2968.46	175	32	60	183	1.48	
16	910.95	3717.24	559	37	60	158	1.51	
17	968.75	3952.19	274	34	62	176	1.24	
18	1120.09	4567.38	319	32	56	138	2.24	
19	1460.65	5951.76	2205	51	42	70	1.98	
20	1764.36	7186.29	278	21	28	32	1.60	

RSSI High Resolution Gamma Spectroscopy Analysis

Quantum Technology
GDR\_C Background Subtract Results

Sample ID : 043728 STS 25585XM A-12 6:0" 71%

Bkg File: . . . h:\gdr\bkg\nocal.bkg | Counting Start. . . . 12-20-04 18:37
ID.: . . NOCAL 24 Hour Background | Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	NEW NET COUNTS	NEW UN- CERTAINTY	FLAG
1	74.70	1.27	523	67	367	68	
4	92,94	1.44	569	85	490	86	
5	185.87	1.25	582	83	513	84	
6	238.47	1.43	2351	86	2291	86	
8	295.00	1.48	1339	64	1306	64	
11	351.69	1.40	1981	64	1892	64	
12	510.51	1.99	402	50	213	51	
13	582.95	1.61	838	43	781	44	
14	609.10	1.48	1348	51	1253	51	
16	910.95	1.51	559	37	504	37	
17	968.75	1.24	274	34	242	34	
18	1120.09	2.24	319	32	281	32	
19	1460.65	1.98	2205	51	1833	51	
20	1764.36	1.60	278	21	23€	21	

Gamma Fraction Limit >= . . . 10.30 % | Decay Limit <= . . . 8.000 Halflives Library Energy Tolerance . . . 1.20

Eff.= 1/[7.40e-002\*En^-2.40e+000 + 7.40e+001\*En^9.80e-001] 02-23-04 17:00

### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- (uCi/g	1.00sigma )	Malflife (hrs)		aks ound	
3i-214	Average:	5.75e-007	+-2.04e-0C8	3.32e-001	4 of	19	
	609.31	5.64e-007	+-2.31e~CC8				
	727.17	3.66e-007	+-6.68e-C08				
	1120.30	6.99e-007	+-8.04e-008				
	1764.50		+-7.93e-008				
Th-234	Average:		+-3.01e-007	5.78e+002	2 of	3	
	92.38		+-4.23e-007				
	92.80		+-4.29e-007				
T1-208	Average:		+-1.01e-008	5.09e-002	2 of	9	
	510.84		+-4.17e-008				
	583.14		+-1.04e-008				
Pb-212	Average:		+-1.73e-008	1.06e+001	5 of	6	
	74.82		+-1.25e-007				•
	77.11		8-40e-CO8				
	87.30		+-1.48e-007				
•	238.63		+-1.80e-008				
	300.09		+-1.85e-0 <b>0</b> 7				
Pb-214	Average:		+-1.78e-008	4.47e-001	5 of	7	
	74.82		+-2.15e-007	. ,			
	77.11		ı-1.45e-007	•			
	241.98		+-7.60e-008				
	295.21		+-3.60e <b>-</b> 008				
	351.92		+-2.17e-008				
Ac-228	Average:	5.44e-007	+-3.04e-008	6.13e+000	4 of	17	
	93.35		+-3.32e-007				
	338.32		+-6,08e-908				
	911.07		+-4.15e-308				
	969.11	4.76e-007	⊦-6.68e-308				
Ra-226	186.10		I.D.Only	1.40e+007	1 of	1	

Ra-224 240.98 4.78e-007 +-1.44e-007 8.69e+001 1 of 1 K-40 1460.80 8.39e-006 +-2.35e-007 1.12e+013 1 of 1

MOTAL: 1.30e-005 uCi/g

UNKNOWN PEAKS

Energy Centroid Net Un- C.L. Bkg. FWHM Net (keV) Channel Counts Certainty Counts Counts (keV) Gamma/sec

None

## RSSI High Resolution Gamma Spectroscopy Analysis

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### Quantum Technology GDR C Version 6.0

Sample	ID	:	STS	P.1.	3-PG	VERIFY	P#25585XM	AREA-	4
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\_\_\_\_\_\_\_

Sample Size . . . . . . 7.80e+002 g | Spectrum File . . H:\PCASPEC\050241.SPM Sampling Start. . . . .00-00-00 00:00 | Counting Start. . . . 02-09-05 16:38 

#### Detector #: 1

Energy(keV) =  $-3.26 + 0.246 \times Ch + -1.64 = -009 \times Ch^2 + 0.00 = +000 \times Ch^3 = 00 - 00 - 00 = 00$ 

 $FWHM(keV) = 1.33 + 0.030 \pm n + 0.00e + 000 \pm n^2 + 0.00e + 000 \pm n^3 00 - 00 - 00 00:00$ Where En = Sqrt(Energy in keV)

Sensitivity . . . . . . . . . 2.00 | Search Start / End. . . . . 0 / 8191 Sigma Multiplier. . . . . . . 1.00 |

### PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL		UN- CERTAINTY	C.L. COUNTS		FWHM (keV)	FLAG
1	74.85		990	74	131	1255	1.27	
2	77.05	327.11	1331	81	144	1407	1.30	D
3	87.18	368.38	392	73	137	1588	1.11	
4	93.17	392.77	715	81	154	1536	1.59	
5	129.06	538.94	295	86	171	1794	1.12	
6	209.18	865.30	542	78	152	1346	1.36	
7	238.46	984.55	6148	99	124	883	1.43	
8	240.73	993.80	1025	63	109	754	1.91	b
9		1113.51	525	67	133	812	1.33	
10		1214.92	508	68	134	746	1.49	
11		1234.80	333	63	125	687	1.48	b
12		1348.34	323	51	99	540	1.70	
13		1390.35	1253	61	102	550	1.27	
14	351.74	1445.95	987	59	105	529	1.10	
15	462.80	1898.30	411	44	81	318	1.54	
16	510.56	2092.83	772	47	80	307	1.60	
17	582.95	2387.71	2127	57	70	246	1.67	
18	609.09	2494.17	758	44	70	238	1.33	
19	727.06	2974.66	475	37	63	180	1.83	
20	794.41	3248.99	260	32	57	152	2.13	
21	860.25	3517.17	261	28	49	104	1.37	
22	910.92	3723.57	1403	44	49	104	1.71	
23	964.42	3941.47	233	22	32	57	1.80	a
24		3958.85	896	37	45	84	2.03	
25	1460.42	5961.85	763	30	27	28	2.01	
26		7197.98	143	17	27	28	1.04	

## RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology

# GDR\_C Background Subtract Results

Sample ID: STS P.1.3-PG VERIFY P#25585XM

00.00.05.16.70

Bkg File: . . .h:\gdr\bkg\nocal.bkg | Counting Start. . . . 02-09-05 16:38 ID.: . . NOCAL 24 Hour Background | Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	NEW NET COUNTS	NEW UN- CERTAINTY	FLAG
1	74.85	1.27	990	74	903	74	
4	93.17	1.59	715	81	676	82	
7	238.46	1.43	6148	99	6118	99	
10	295.02	1.49	508	68	491	68	
14	351.74	1.10	987	59	943	60	
16	510.56	1.60	772	47	677	48	
17	582.95	1.67	2127	57	2099	57	
18	609.09	1.33	758	44	711	44	
22	910.92	1.71	1403	44	1376	44	
24	96B.68	2.03	896	37	880	37	
25	1460.42	2.01	763	30	577	31	
26	1763.89	1.04	143	17	122	17	

# RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology GDR\_C Nuclide Activity Summary

## Sample ID: STS P.1.3-PG VERIFY P#25585XM

### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- (uCi/g	1.00sigma }	Halflife (hrs)		aks und	
Bi-214	Average:	6.99e-007	+-3.87e-008			19	- <b></b>
	609.31	6.77e-007	+-4.16e-008				
	727.17	6.78e-007	+-1.64e-007				
	1764.50		+~1.36e-007				
Bi-212	Average:		+-1.16e-007	1.01e+000	2 of	7	
	727.00	1.42e-006	+-1.63e-007				
	727.17	1.42e-006	+-1.63e-007				
Th-234	Average:	2.87e-006	+-6.00e-007	5.78e+002	2 of	3	
	92.38	2.85e-006	+-8.43e-007				
	92.80	2.89e-006	+-8.54e-007				
T1-208	Average:	1.07e-006	+-2.66e-008	5.09e-002	4 of	9	
	74.97	1.05e-006	+-8.91e-007				
	510.84	1.17e-006	+-8.23e-008				
	583.14	1.05e-006	+-2.87e-008				
	860.37	1.29e-006	+-1.41e-007				
Pb-212	Average:	2.67e-006	+-4.15e-008	1.06e+001	5 of	6	
	74.82	2.70e-006	+-2.86e-007				
	77.11	2.70e-006	+-1.76e-007				
	87.30	1.53e-006	+-2.85e-007				
	238.63	2.70e-006	+-4.39e-008				
	300.09	2.26e-006	+-4.25e-007				
Pb-214	Average:	6.47e-007	+-3.71e-008	4.47e-001	4 of	7	
	74.82	6.68e-007	+-4.92e-007				
	77.11	3.45e-007	+-3.03e-007				
	295.21	5.83e-007	+-8.05e-008				
	351.92	6.70e-007	+-4.24e-008				
Ac-228	Average:	3.15e-006	+-6.44e-008	6.13e+000	10 of	17	
	93.35		+-6.60e-007				
	209.28	2.25e-006	+-3.25e-007				
				,			

	270.23	3.12e-006 +-4.01e-007
	327.64	2.51e-006 +-3.99e-007
	338.32	2.82e-006 +-1.37e-007
	463.00	3.15e-006 +-3.38e-007
	794.70	3.20e-006 +-3.91e-007
	911.07	3.23e-006 +-1.03e-007
	964.60	3.08e-006 +-2.90e-007
	969.11	3.66e-006 +-1.53e-007
Ra-224	240.98	5.14e-006 +-3.15e-007 8.69e+001 1 of 1
K-40	1460.80	5.58e-006 +-2.96e-007 1.12e+013 1 of 1
N 40	1400.00	3.300 000 / 2.300 007 1.120.013 1 01 1
TOTAL:		2.33e-005 uCi/g

# UNKNOWN PEAKS

 Centroid	Net	Un-	C.L.	Bkg.	FWHM	Net
Channel	Counts	Certainty	Counts	Counts	(keV)	Gamma/sec
538.94	295	======== 86	======================================			

# RSSI High Resolution Gamma Spectroscopy Analysis

## Quantum Technology GDR C Version 6.0

Sample in . Sis F.I.SFG in F#25503VM //	Sample ID	STS P.1.3PG	16" P#25585XM	AREA - 4
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Detector #: 1

Energy(keV) =  $-3.26 + 0.246 \times Ch + -1.64e - 009 \times Ch^2 + 0.00e + 000 \times Ch^3 00 - 00 - 00 00:00$ 

FWHM(keV) =  $1.33 + 0.030 \pm n + 0.00e + 000 \pm n^2 + 0.00e + 000 \pm n^3 00 - 00 - 00 00:00$ Where En = Sqrt(Energy in keV)

Sigma Multiplier. . . . . . 1.00 |

### PEAK SEARCH RESULTS

PK.	ENERGY	ADDRESS	NET	UN-	C.L.	BKG	<b>FWHM</b>	
#					COUNTS			
1								
_			3869					
2 3	77.09				266			
	84.44		1045				1.50	
4	87.17						1.46	
5	89.84		2104		193		1.29	-
6			2030		272			
7		418.22						e NET < CL
8	105.30							
9	129.06		1484				1.37	
10		640.82					1.76	
11	209.10		2369	138	262	3996	1.33	
12		984.64			227		1.43	a
13	240.91	994.54	3138	110	191	2228	1.64	b
14	270.09	1113.40	1600	122	245	2372	1.46	a
15	277.30	1142.73	921	150	316	3238	1.61	b
16	295.07	1215.11	910	110	223	2070	1.53	a
17	299.95	1234.98	1608	109	211	1944	1.48	b
18				93	177	1645	1.23	
19			5352			1832	1.45	
20	351.80	1446.21	1483	89			1.26	
21	409,28	1680.33		82	162	1320	1.24	
22	462.78	1898.24	1562		143		1.37	
23		2092.47		_			1.57	
24			359		127		1.68	
25			8293				1.51	
26		2494.13					1.57	
27			1853				1.61	
28		3159.00					1.50	
29		3212.44	201		106		1.26	
23	100.43	3414.44	201	23	100	500	1.20	

30	794.79	3250.55	939	55	96	428	1.83
31	835.35	3415.77	300	41	78	319	1.18
32	860.45	3518.01	979	51	85	321	1.23
33	911.06	3724.15	5671	85	81	292	1.72
34	964.65	3942.41	1000	46	69	211	1.91 a
35	968.81	3959.36	3271	67	74	230	1.87 b
36	1120.02	4575.27	239	38	73	225	2.03
37	1460.50	5962.17	1054	44	64	163	2.54
38	1587.80	6480.69	457	32	49	98	2.01 a
39	1592.06	6498.07	249	26	44	85	2.23 b
40	1620.47	6613.76	213	28	51	108	1.91
41	1630.43	6654.35	217	26	46	84	1.63
42	1764.18	7199.18	221	27	47	95	2.58

# \_\_\_\_\_\_\_

### RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology

# GDR\_C Background Subtract Results

Sample ID : STS P.1.3.-PG 16" P#25585XM

#UL-----

Bkg File: . . . h:\gdr\bkg\nocal.bkg | Counting Start. . . . 02-09-05 14:23 ID.: . . NOCAL 24 Hour Background | Current Date . . . . 00-00-00 00:00

PK#	ENERGY (keV)	FWHM (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	NEW NET COUNTS	NEW UN- CERTAINTY	FLAG
1	74.79	1.85	3869	151	3767	151	
3	84.44	1.50	1045	131	1021	131	
6	93.25	1.53	2030	143	2001	143	
12	238.48	1.43	26277	196	26247	196	
16	295.07	1.53	910	110	892	110	
20	351.80	1.26	1483	89	1439	89	
23	510.47	1.57	2635	88	2540	88	
25	583.00	1.51	8293	109	8265	109	
26	609.08	1.57	1274	68	1227	68	
33	911.06	1.72	5671	85	5644	85	
35	968.81	1.87	3271	67	3255	67	
36	1120.02	2.03	239	38	220	38	
37	1460.50	2.54	1054	44	868	45	
42	1764.18	2.58	221	27	200	27	

# RSSI High Resolution Gamma Spectroscopy Analysis

# Quantum Technology GDR C Nuclide Activity Summary

## Sample ID: STS P.1.3.-PG 16" P#25585XM

#### FINAL ACTIVITY REPORT

Nuclide	Energy (keV)	Conc +- (uCi/g	1.00sigma )	(hrs)	Fo	aks und	
Bi-214	Average:		+-5.10e-008	3.32e-001	3 of	19	
	609.31		+-5.59e-008				
	1120.30 1764.50		+-1.71e-007 +-1.81e-007				
Bi-212	Average:		+-2.45e-007	1 010+000	3 of	7	
B1-212	727.00		+-2.57e-007	1.0164000	3 01	'	
	785.00		+-1.30e-006				
	1620.60		+-1.01e-006				
Th-234	Average:		+-9.00e-007	5 786+002	2 of	3	
III 234	92.38		+-1.26e-006	3.7007002	2 01	.,	
	92.80		+-1.28e-006				
T1-208	Average:		+-4.28e-008	5.09e-002	6 of	9	
	74.97		+-1.57e-006	0.070 002		•	
	84.90		+-2.45e-006				
	277.35	2.54e-006	+-4.14e-007				
	510.84	3.76e-006	+-1.31e-007				
	583.14	3.55e-006	+-4.67e-008				
	860.37	4.15e-006	+-2.17e-007				
Pb-212	Average:	9.92e-006	+-6.99e-008	1.06e+001	5 of	6	
	74.82	9.93e-006	+-5.04e-007				
	77.11	9.93e-006	+-2.90e-007				
	87.30	9.87e-006	+-4.48e-007				
	238.63	9.93e-006	+-7.42e-008				
	300.09	9.37e-006	+-6.33e-007				
Pb-214	Average:	8.83e-007	+-4.78e-008	4.47e-001	5 of	7	
	74.82	8.77e-007	+-8.68e-007				
	77.11		+-4.99e-007				
	241.98		+-2.49e-007				
	295.21	9.08e-007	+-1.12e-007				

	351.92	8.77e-007 +-5.45e-008	
Th-228	84.37	1.95e-005 +-3.07e-006 1.68e+004	1 of 2
Ac-228	Average:	1.08e-005 +-1.03e-007 6.13e+000	15 of 17
	89.95	2.53e-005 +-1.33e-006	
	93.35	1.14e-005 +-9.90e-007	
	209.28	8.44e-006 +-4.91e-007	
	270.23	8.15e-006 +-6.23e-007	
	327.64	8.69e-006 +-6.21e-007	
	338.32	1.03e-005 +-2.32e-007	
	409.51	7.47e-006 +-9.99e-007	
	463.00	1.03e-005 +-5.22e-007	
	772.17	9.26e-006 +-1.56e-006	
	794.70	9.91e-006 +-5.84e-007	
	835.50	8.79e-006 +-1.21e-006	
	911.07	1.14e-005 +-1.71e-007	
	964.60	1.13e-005 +-5.16e-007	
	969.11	1.16e-005 +-2.39e-007	
		1.15e-005 +-1.39e-006	
Ra-224	240.98	1.18e-005 +-4.73e-007 8.69e+001	1 of 1
K-40	1460.BO	7.20e-006 +-3.70e-007 1.12e+013	1 of 1
TOTAL:		7.50e-005 uCi/g	

# UNKNOWN PEAKS

Energy	Centroid		Un-	C.L.	Bkg.	FWHM	Net
(keV)	Channel		Certainty	Counts	Counts	(keV)	Gamma/sec
105.30 129.06 154.07 562.33 1587.80 1592.06	442.18 538.96 640.82 2303.72 6480.69 6498.07	657 1484 687 359 457 249	139 163 149 64 32 26	275 322 298 127 49	4902 6020 5178 771 98 85	1.37 1.37 1.76 1.68 2.01 2.23	4.484e+000 8.255e+000 3.516e+000 4.227e+000 1.478e+001 8.075e+000

# Appendix F

**Calibration Logs and STS Field Screening Forms** 

## Equipment Use and Calibration

The radiation screening used the following equipment:

- Ludium 2221 Rate Meter-Scaler
- Ludlum 44-10 2 inch x 2 inch Nal Probe (shielded)
- Ludium Model 3 Survey Meters with attached Pancake Probe

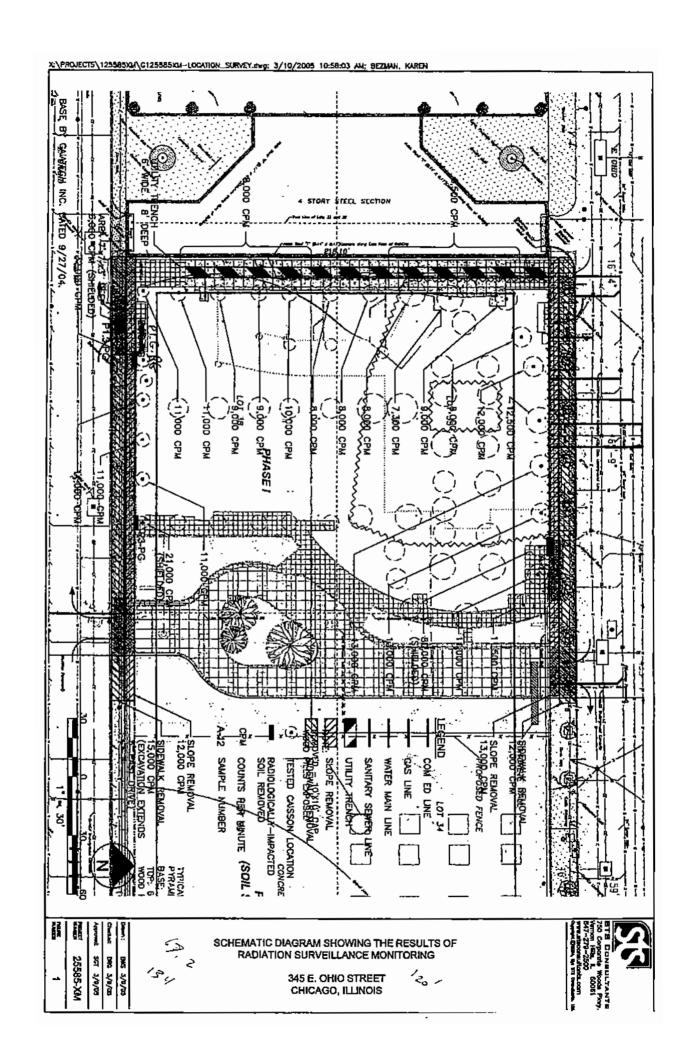
Prior to the start of fieldwork, the Ludlum 44-10 2 inch x 2 inch Nat Probe and the Ludlum 2221 Rate Meter-Scaler were calibrated at Kerr-McGee's Rare Earths Facility in West Chicago, Illinois. Each instrument was calibrated to an equivalent number of counts per minute to correspond to 7.1 pico curies per gram (pCi/g) as summarized below:

Instrument	Equivalent Cour	nts per Minute	Equivalent to
Instrument	short cord	long cord	Equivalent to
Ludlum Model 2221/44-10 Probe	7319	6252	7.1 pCi/g

The instruments were calibrated to 7.1 pCi/g total radium, the USEPA's clean-up level. The instrument calibration was performed by Dumas Guerrier, Senior Environmental Technician with STS. Mr. Guerrier also conducted the field screening.

It should be noted that although STS calibrated the radiation screening equipment using a long probe cable (18 foot length) and short cable (6-foot length), most measurements were made using the short cable except where measurements were recorded along the walls/floor of deeper excavations (greater than 5-feet deep). Copies of the calibration records are included in Attachment A.

Radiation surveillance monitoring was performed during the excavation of several utility alignments (within the roadway on East Grand Avenue and adjacent sidewalk), excavation of test pits in areas of the caissons and grade beams, and excavation of planters within the sidewalk areas. The locations of these features are shown in Figure 1 (attached).





Position Title Curicon Mental Decialis	NOTE: The responsibilities and authority of MTS and MTS' Field Personnel	include neither the responsibilities nor the authority of the "Competent Person"
Doction: 34 6 050 9 1. (Hidden St. Doctor and levelors and depth are estimated  Summary of technical andre engineering services performed, including field test data. Locations, alevations and depth are estimated  Research	ior the project site as defined by OSHA Regulations: 25CFR 1826 S	
Doction: 34 6 050 9 1. (Hidden St. Doctor and levelors and depth are estimated  Summary of technical andre engineering services performed, including field test data. Locations, alevations and depth are estimated  Research	Project: OGM JUESCONS	Project No.: 2558 CM
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Hours: Discourse of Evernaion 125 Hours  It loge. The Soils  Drea worked: Protect @ the Works Soil of the property test port for Corsons Exacution  Executating: Discourse & Dellard, Soil of the property test port for Corsons Exacution  Executating: Discourse of the Works Soil of the property of the Corsons Exacution  Executating: Discourse of the Works of the Works of the Property of the Soil of the	I des conce	
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Area worked: footed a the work 3de of the fraperty, Torrept ho Corsons Exacution  Exampling: Santiol At D-1(CH) of ordinance Condinance.  Example to 90 Detunal sand a 8' w 4 Andrew fell those Detunal  Soud Rodins a 9W CPD - than 12 B/35.  — C-3 (C13) Sourm of Example of Story of Source fell those Detunal  and Tax. All above 80' Roding it 8000 cm - than 12 B/35.  — B-4 (CB) Govern of Example ton at 85 fet water Source of 12 B/15 for April and we shall be a feel to 12 B/15 for April and we shall be a feel with wall  — At Goode Bearn Reaches Down Source Of the Condinance of the Condin	Hours : Diamons f. Evennien 6	25 Hours
Area worked: footed a the work 3de of the fraperty, Torrept ho Corsons Exacution  Exampling: Santiol At D-1(CH) of ordinance Condinance.  Example to 90 Detunal sand a 8' w 4 Andrew fell those Detunal  Soud Rodins a 9W CPD - than 12 B/35.  — C-3 (C13) Sourm of Example of Story of Source fell those Detunal  and Tax. All above 80' Roding it 8000 cm - than 12 B/35.  — B-4 (CB) Govern of Example ton at 85 fet water Source of 12 B/15 for April and we shall be a feel to 12 B/15 for April and we shall be a feel with wall  — At Goode Bearn Reaches Down Source Of the Condinance of the Condin		1
Area worked: footed a the work 3de of the fraperty, Torrept ho Corsons Exacution  Exampling: Santiol At D-1(CH) of ordinance Condinance.  Example to 90 Detunal sand a 8' w 4 Andrew fell those Detunal  Soud Rodins a 9W CPD - than 12 B/35.  — C-3 (C13) Sourm of Example of Story of Source fell those Detunal  and Tax. All above 80' Roding it 8000 cm - than 12 B/35.  — B-4 (CB) Govern of Example ton at 85 fet water Source of 12 B/15 for April and we shall be a feel to 12 B/15 for April and we shall be a feel with wall  — At Goode Bearn Reaches Down Source Of the Condinance of the Condin	hiloge . 78 hales	
Exampling Danied At D-1(C16) # ot Caison Continence.  Example of the Go" Datuel and Q 8" is the Order fell Above Datuel  Soud Roding Q 400 CPn - there To Bits.  — (-3 (C13) Brown of Example of the Ording At 800 CPn - there To Both Gudes  Quel like fell above 80" Roding At 800 CPn - there To Bits.  — B-4 (C13) Brown of Example of 8.5 fet William To Bits.  Act Unders & Risc & Brown to Example of the Ording At 100 CPn - there To Fet to Act the Organ To Bits.  Act the opport 3 feet; Worly wall  — At Goode Bearn thember Don't Court and Could to 8"  An 'H, Q'indows along fill, above 70" Booking a 1350 CPm - they Tolk for the Original Could to 8"  In the Cindows clay + huse fell. Roding a 1350 CPm with Wed - they Tolk for the Court of Act of Act of The Cindows clay + huse fell. Roding a 1350 CPm with Wed - they Tolk for Title Current Act of Act of Action of Title Current Act of Action of Action Title Current Act of Action of Action Title Current Act of Action of Action of Title Current Act of Action of Action of Title Current Act of Action of		·
Exampling Danied At D-1(C16) # ot Caison Continence.  Example of the Go" Datuel and Q 8" is the Order fell Above Datuel  Soud Roding Q 400 CPn - there To Bits.  — (-3 (C13) Brown of Example of the Ording At 800 CPn - there To Both Gudes  Quel like fell above 80" Roding At 800 CPn - there To Bits.  — B-4 (C13) Brown of Example of 8.5 fet William To Bits.  Act Unders & Risc & Brown to Example of the Ording At 100 CPn - there To Fet to Act the Organ To Bits.  Act the opport 3 feet; Worly wall  — At Goode Bearn thember Don't Court and Could to 8"  An 'H, Q'indows along fill, above 70" Booking a 1350 CPm - they Tolk for the Original Could to 8"  In the Cindows clay + huse fell. Roding a 1350 CPm with Wed - they Tolk for the Court of Act of Act of The Cindows clay + huse fell. Roding a 1350 CPm with Wed - they Tolk for Title Current Act of Act of Action of Title Current Act of Action of Action Title Current Act of Action of Action Title Current Act of Action of Action of Title Current Act of Action of Action of Title Current Act of Action of	Area Worked: Proceed @ the Donky Sole	of the property textofits for Corsons Exacotion
Econoted to 20° valued and a 8' with and fill those Dalmal  Found Roding a good cop - than 12 Bigs.  (-3 (213) Even of Exerction At 90° valued pt 80° to 14.  and Tax. It above 80° Roding At 800 cm - than 12Bigs.  B-4 (CB) Exercise to at 8.5 fet valued Soud a 7.5 feet  hoth and as I list fill Brits Goding At 1400 cm - than 12 Bigs.  At access there is a feet with wall  At access there is a feet of the sound of the soun		<i>y</i>
Econoted to 20° valued and a 8' with and fill those Dalmal  Found Roding a good cop - than 12 Bigs.  (-3 (213) Even of Exerction At 90° valued pt 80° to 14.  and Tax. It above 80° Roding At 800 cm - than 12Bigs.  B-4 (CB) Exercise to at 8.5 fet valued Soud a 7.5 feet  hoth and as I list fill Brits Goding At 1400 cm - than 12 Bigs.  At access there is a feet with wall  At access there is a feet of the sound of the soun		
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Boul Roding @ 900 CPm - Haw P.C. Bigs.  (C-3 (C13) Bottom of Excavation M. 90° polenose Pl 80° hotel. Qualus  and like fel above 80° Roding M. 800 CPm - Haw 72 Bigs.  B-4 (C13) Gottom of Excavation at 8.5 fet Natural Soud @ 75 feet.  hotel Andrews of List feld Boxts. Goding At 1400 CPm - How 72 Bigs.  Ph the appear 3 feet. Wall.  As Goole Bearns hearless Down South April April on 18 for hotel wide to 9 feet days: Bottom @ 90 Natural Soud 188'  hotel Andrews clay fell. above 80°. Reading @ 13500 CPm at from 18 Bigs.  B-6 (C-3) Bottom of Excavation at 9 feet Natural Soud 88'  North Aindress, clay + huse fell. Reading @ 1350 CPm answel North Well.  Field Test Data is Estimated—Pending Final Laboratory Test Results  Field Representative  By Countries Several Description  Title European Method Forcialis	<i>-</i>	/
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Field Test Data is Estimated - Pending Final Laboratory Test Results   Field Representative   By Lowania Joseph     Title Eurican Mendang Final Laboratory Test Results   Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results   Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results   Title Eurican Mendang Final Laboratory Test Results   Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Laboratory Test Results     Title Eurican Mendang Final Labo		
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NOTE: The responsibilities and authority of MTS and MTS' Field Personnel include neither the responsibilities as defined by OSHA Regulations: 29CFR 1926 Subpart P.	
	Page: / of 3
Project <u>DEM Enves Toks</u>	Project No.: <u>♂%3.C+-M</u>
Location: 34/ E Othio Street Chicago H.	Day/Time: Tuesday Lee 14 04
Summary of technical and/or engineering services performed, including field test data. Loc	ations, elevations and depth are estimated
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Hours : December Juenniew 135 Hours	<del></del>
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	ing @ 1 000 CAn assets blood thow Il Ri
PC-P1 (09) BORON of Excapation @ 90" NO	
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and linders hire fell to 75'	
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of Bricks + Dischell, to 8.5	uning section (4 6 to Wit ) Grande)
Leadin At 9000 CAn UNSHIELE	L & flow Plaigs.
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Field Representative Bytesau #	rus Diseas
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	laterial Testing Services, Inc.



NOTE: The r	e project sile as defined by OSHA	Regulations: 29CFR 1926 S	Include neither the responsibilities nor the authority of the "Competent Person" abpart P.  Page: <u>2</u> of 3
Project	Obs M Euxes boas		Project No.: <u>85585 CM</u>
Location:	341 6.0His Stroit	Chicago Sl.	Day/Time: Tuesday Dec 14 of
Sum	mary of technical and/or engineer	ing services performed, Inclu	rding field test data. Locations, elevations and depth are estimated
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	P6-P1 (@8A)	Bottom of Excas	ation At 85 Natural Soud At 70" with
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	P1.6-P6 (C8)		ration At 85 potenal Sand @ 7.5 hote Gudias
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	· · · · · · · · · · · · · · · · · · ·	Remove the	Lewould to good of Soil and Conjulately by actool Soil freal leading upon Buosal
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Field Represen	tative		Byldennies (Seguera)
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Company			Material Testing Services, Inc.



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101 1	, , , , , , , , , , , , , , , , , , ,	Page: <u>3</u> of ≤
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Field Representative	for th	responsibilities and authority of MTS and lie project site as defined by OSHA Regi	u M13 Fleid Personne in Ilalions: 29CFR 1926 Sub	couds neuner the responsibilities nor the opart P.	Page: of
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Coult BBELL Long Sweet and Very form on Presided C Ste 1/2 Herry Source and Using Heire Completed Area Sompling of Heire produce and using Heire Equipment on Heire Demand.  Secure sel Area will superted from the Gan Ban Emosed.  Worked of the Similar Source treaty of feel Exist of Po live.  From Pa to Pf live.  Excapable to B feel wintered Sol Ht 75 feet wife Sound + Carolins fill to 7.5 feel.  Readers @ 1/100 apm unstriffed & than 98 feb fas spour Coupling Back fill the Area with C Ath for future Ebrandian.  Field Test Data is Estimated - Pending Final Laboratory Test Results  Position.  By Academic & Successful Succes		Below Grade	- Reading At a	21 and chan Statisted The	u 72 BiBC,
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The responsibilities and authority of MTS and MTS' Field Personnel Include neither the responsibilities nor the authority of the "Compelent Person" for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: <u>タ</u> of ス OGM Envertous Project: Project No.: 2558592 M 241 6. Otto St / HEAGO Day/Time: NEdgesdon NEC. K OU Location: Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated Borrow of Excevation Q 8 Het Notinal Sand At 7'0" With Girden 11000 clas unstitled & thou 7.2 Fe 90" Natural Sand O.S. MSHIF Hed - I than 72/6 Colstration Mostfielded stort Cost - thou 7.2. Per ☐ Field Test Data is Estimated – Pending Final Laboratory Test Results Field Representative Position Material Testing Services, Inc. Company



The responsibilities and authority of MTS and MTS' Field Personnel include neither the responsibilities nor the authority of the "Competent Person" for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: / of 1 DEM THURSDAS Project: Project No.: 255254 xx 211 6. DINO St. PHICAGO SE. Day/Time: Yuxida~ Location: Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated and I person from RSST belonsfors Dunnesous f. Successor 12.0 Hrs 2 person in PRE foundation NAY South of to live Vility fromh al He Ceneral of Enjacted gove at 13-Pa (C6) Set our Exclusion gone Al He Perior tor Houd de nudalio o NAI/ Be present during our previous Wort ☐ Field Test Data is Estimated - Pending Final Laboratory Test Results Field Representative Position Material Testing Services, Inc. Company



The responsibilities and authority of MTS and MTS' Field Personnel include neither the responsibilities nor the authority of the "Competent Person" NOTE: for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: 2 of 1 CX3M LUVESOSS Project: Project No.: 25385 KM 341 E. OKO A. CHIRAGO H. Location: Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated Reading of the Suported wateral at 10000 Cfm 34+Hod > Han 72 Bi/gs. Villy houch wood of Pr or live 1 Travey Excovation for Reading at Woochn UNSHighted Box filled with CAG won Completion Area 8'deep by &' woole. Sile Area to Be placed Douty of A line Theoting Area line 11 Condens and Brices of huse. Sel At 13 600 onsepibled & flow 7.2 Pc sand st 65 feet. Dolio Dienveys the Higher Reading Collated At the top 85 feet : At 6/00 Com Unsing bled BACK PROUG d At 30379 CVM unstisked = 72 Rifes and 7390 Proterted = 72 Rifes. Calibration Ludlum 2221 brit a 2x2 NA frobe 40-10 Sopial \$ 174496 Field Test Data is Estimated - Pending Final Laboratory Test Results Field Representative Position Material Testing Services, Inc. Company\_



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Project OGM Juvaslozs	Project No.: 35585°CM
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Company	Material Testing Services, Inc.



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	Project No.: 255800 M
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for the	project site as defined by OSHA Regulations: 29CFR 1926 Subpart P.	Page: _/_ of /
Project:	OGH Luves Cons	Project No.: 258544
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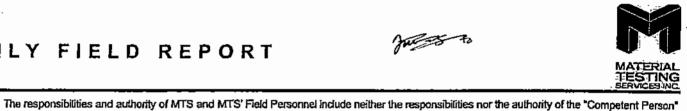
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Project: _	OGM Juves lons		Project No.	: 25585°CM
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Company		<del></del>	Material Testir	ng Services, Inc.



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Project:	OGW Jupersons	Project No.: <u> </u>
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Company		Material Testing Services, Inc.

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for the project site as defined by OSHA Regulations: 290	FR 1926 Subpart P.  Page: _/ of /
Project: OGIM Juves Fores	Project No.: <u>25585 ← W</u>
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Company	Material Pesting Services, Inc.



	ority of MTS and MTS' Field Personne by OSHA Regulations: 29CFR 1926 S	
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Project: DGW Suce		Project No.: <u>25585224</u>
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Field Representative		BV-llendod Juerentu)
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Company		Material Testing Services, Inc.



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Project:	OGM Luves Gons	Project No.: 25585 & M
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NOTE: The responsibilities and authority of MTS and MTS' Fleid Personnel Include neither the responsibilities nor the authority of the "Competent Person" for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: / of 2 OGM Invisions Project: 34/E. ONIO OHICAGO SC. Location: Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated 1975 STAFF 10.5 Hrs Execus ling ☐ Field Test Data is Estimated – Pending Final Laboratory Test Results Field Representative \_\_\_\_\_ Position. Material Testing Services, Inc. Company\_



NOTE: The responsibilities and authority of MTS and MTS' Field Personnel Include neither the responsibilities nor the authority of the "Competent Person" for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P.

Page: 2 of 2

Project: _	OGH Lucestons	Project No.:Project No.:
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to the project site as delified by Colin Regulatoris.	Page: / of 2
Project: OG M Sures Cons	Project No.: 25385 CM
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Field Representative	By Queros Shearn
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Company	Material Testing Services, Inc.



The responsibilities and authority of MTS and MTS' Field Personnel Include neither the responsibilities nor the authority of the "Competent Person" NOTE: for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: 2 of 2 Project: Project No.: 2557.5 ~ 24 Oltro A. Clorago Alinois Location: Day/Time: 706560 Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated At 20279 Com UNSHIELDORS = 72 PE Ludlum 2221 with J42 Opl Probe 45-10 Sorial \$174 896 ☐ Field Test Data is Estimated - Pending Final Laboratory Test Results Field Representative Position\_ Company Material Tešting Services, Inc.



The responsibilities and authority of MTS and MTS' Field Personnel Include neither the responsibilities nor the authority of the "Competent Person" NOTE: for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: / of/ DOM LUNGSONS Project: Project No.: 25385 &M Location: Day/Time: Nednesday Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated 7.00 Hrs L EASTERN Sontion EAS of EAST University and Exeasa ling Keniowol. feld Test Dala is Estimated – Pending Final Laboratory Test Results Field Representative Position\_ Company\_ Material Testing Services, Inc.



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The responsibilities and authority of MTS and MTS' Field Personnel Include neither the responsibilities nor the authority of the \*Competent Person\* NOTE: for the project site as defined by OSHA Regulations: 29CFR 1926 Subpart P. Page: / of / DEA LAVES FORMS Project No.: 25585454 Project: CHICAGO V Location: Summary of technical and/or engineering services performed, including field test data. Locations, elevations and depth are estimated నేవ్ Exemplia Politration aid Test Data is Estimated - Pending Final Laboratory Test Results Field Representative Tille- Workon law **Position** Material Yesting Services, Inc. Company\_



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MTS Representative			Title Tonien he of the Parin E.
	Company		M78 Representative
White - Office White - Field Yellow - Time Card 1004 2K	, ,		Marie Toro Cont



NOTE: The responsibilities and authority of MTS and MTS Fit Person* for the project site as defined by OSHA Regul				onsibilities no	or the authority of t	•
Project OGYAL BRUES FORS			Report N	Vo		
Project No. 25585 Cry			Day/Date	Tuesda	y Janvary 1	805
Location 3418. ONio Street	<u>.</u>	<del></del>		-	Cold 150 F	
Contractor, TEE			Client _	_		
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental _	<del>-</del>	A		9:30	TOTAL CHARGEABLE
NAME:	Tolls \$		D	epart Job	4.00	HOURS 4 hour minimum
ADDRESS:	Parking \$	0		otal Hours n Job	616	8 hour minimum
PHONE:	Mileage _	.30	— т	ravel Time		9.00
Present on Site OYES O NO	Project Pre	paration '			•	
Summary of sampling and testing services performed, include	ling field test d	ata, Locati	ons, elevatio	ons and dept	h are estimated.	
Area Would : Wast Confleted @ 1 mily New Connew of the property, Dary of 1804 Buch  Gas line and Initian Seven Excavo Low.						
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Cond unstricted of	100		060 CHD	YPSGA,B	lect (v. t.e.	.top.a.fel.
• ☐ Field Test Data is Estimated - Pending Final Laboratory Test	Results /			Site Sket	ch: Indicate North	
Position		By &	) masaasta m	] Leceum	eu)	
Company		Tria	consens he	10-1	ein li	
·		11110 💆	VINON 102	MTS Repre	sentative	
White - Office W	/hite - Field	Yellow -	Time Card		<u> </u>	8/04 5K



		el include neither the responsibilities nor the authority of the "Competent
Pers	on" for the project site as defined by OSHA Regulations: 29 C	Page 3 of 2
Project	OFN ENDESCORS	Project No. 25585214
Location	-201 E. OHO St. CHERSO	Day/Date Tireday Sowary 18 05
S	ummary of sampling and testing services performed, includin	g field test data. Locations, elevations and depth are estimated.
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	•	SMENOOL - Han DIREITS.
	U 1	Gas line Excavolion a He South End of the
		Trakeniol Front The Bucket and @ Sunface
	4	of anders languaged Ashes Q-5 feet with
		75' Notinal Soud Or Spet Reading
	@ 6100 CPm UDSMit Hole	_
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		levation Al Theasure harts Have been Complified
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	of Levilities Reading.	1 @ 1300 CBs unstirland e Reau 7276/25,
Dolos	: No Suparted hideric	al Aus Lear Er Conen Ference,
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Colibrate	on : At 20279 CPm UNSHELDO	2 -72 Rifes and 7219 OB SHE Had -72 Rifes.
Equi Sorie	t . Ludlin D21 Nit) J"x2" ))	Al Rose 40-10 S#196496
77		
* Fleid Test Da	ta is Estimated - Pending Final Laboratory Test Results	0 8
Field Repres	sentative	By Limpaint Desaure
Position		Title Gevision heis of Specials
Company		

White - Office

White - Field

Yellow - Time Card



NOTE: The responsibilities and authority of MTS and MTS Fig Person* for the project site as defined by OSHA Regu	eld Personnel inc lations: 29 CFR	clude neither 1926 Subpar	the respons	ibilities no		-
Project OGM Envestors			2 No.		of	<u>⊰.</u>
Project No. 255852m		– ,	Report No.	Linsobio	la Journe	19 05
Location 34/8. Otho St. Chicago L.					thy Junny	
Contractor			Client		/ /	<del></del>
Project Competent Person per 29 CFR Part 1926 (Subpart P)  NAME:	Equipment Rental Tolls \$	9			<u>9:30</u> 3:30	TOTAL CHARGEABLE HOURS 4 hour minimum
ADDRESS:	Parking \$_		Tota on J	i Hours ob	6.0	8 hour minimum
PHONE:	Mileage	50_	Trav	el Time	1.5	85
Present on Site OYES ONO	Project Prep	aration Tim			1:0	
Summary of sampling and testing services performed, include	ding field test dat	a. Locations	, elevations	and depti	n are estimated.	
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* D Field Test Data is Estimated Pending Final Laboratory Test Field Representative  Position  Company	Results	By <u>Chair</u> Title Tins	on hou	Site Skets  Seemen  Seemen	ch: Indicate North	
White - Office W	/hite - Field	Yellow - Time				8/04 5K



	responsibilities and authority of MTS and MTS Field Personnel In on for the project site as defined by OSHA Regulations; 29 CFR	1926 Subpart P.  Page of
Project	Oting Tuves Sous	Project No. 25575°C'19
Location	34/ E OHO St. CHICAGO De	Day/Date Wednesday Lower 19.05
s	lummary of sampling and testing services performed, including fi	eld test data. Locations, elevations and depth are estimated.
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	Appropriate line.	
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	Fand leader, Q. Towoch	Ursmilded - than It reify
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	Gade.	
Notes_	: Calibrate Equipment with a C	wil and AVENHEING He Reading.
	growing good and the ca	The Court of the court of
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Guspa	I : Ludliew 3321 No. 49 2" t3" VA	Probe 40-10 Serial # 174496
* Field Test Dal	la is Estimated - Pending Final Laboratory Test Results	
Field Repres	sentative	By along porto Le environ
Position		Title Troises Sould faciolis
Company		MTS Representative
	White - Office White · Fiek	Yellow - Time Card 10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fit Person* for the project site as defined by OSHA Regu	eld Personnel inc	lude neither the re	sponsibilities no	or the authority of t	the "Competent
		, , , , , , , , , , , , , , , , , , ,			2_
Project OGM Envestors		- Repor	t No		
Project No. 255854M	<del> </del>	_ Day/D	ate Thunse	Lay Louvary	30,05
Location 341 E. Othio Shoot CHICAGO	s.L.			, .	owj
Contractor TRI		_ Client			
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental	<i>®</i>	Arrive Job	9:30	TOTAL CHARGEABLE
NAME:	Tolls \$_		Depart Job	4130	HOURS 4 hour minimum
ADDRESS:	Parking \$_	_&_	Total Hours	7.0	8 hour minimum
PHONE:	Mileage	<u> 50</u>	Travel Time	0.5	8.5
Present on Site DYES DNO	Project Prepa	aration Time	/.0	5	
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- than 7.2 Peike.	,	<b>.</b>		, <u>, , , , , , , , , , , , , , , , , , </u>	T
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Field Representative Jm Beld			0.0	A(,    A	
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Company		Tale Divinon he	tal Decin	list	
			MA'S Repres	sentative	



	nsibilities and authority of MTS and MTS Field Personnel inc or the project site as defined by OSHA Regulations: 29 CFR 1		
			Page of
Project	OGIM THURS SPAS	Project No	25585214
Location	361 E. OHIO HOR (HICAGO AC.	Day/Date 火	Cunsday Suvary 30 05
Summ	ary of sampling and testing services performed, including fie	·	
Cont'	Moniton Star pole of Sport is	E fore Reliand on char	n heaterial Al Son
	Exerced during the Exercision	Has Been Stoned Offel	Sustruction Ste for
_	Asoper disposal.		
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	and Concrete Stat how the	He Douth Cursof other	to the Center & Ocho
	Those Tuoniton Se arease	reday Soil and Bot	bu Concrete Stab-
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Note	: Calibrale Gung nort, wite, Case	um 137 Minutes Counts	Aresazinz.
BACK RAMINO	: At 5200 CPm instrictled		
Calibration	: 20,279 CPm Unsitis Wed = 7276/19	Saud 13/9/By Stickle	C-7216/gc,
La trument	: Ludlum 2221 North 2"x2" DM 1/2	1 obe 40-10 Jet 174496	2
Field Test Data Is i	Estimated - Pending Final Laboratory Test Results	0.00	
Field Representa	ative	By common Sec	WHITE W
Position		Title Eurison New Toff	a calin
Company		MTS Re	epresentative
	White - Office White - Field	Yellow - Time Card	10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Find Person* for the project site as defined by OSHA Regu				sponsibilities i	nor the authority o	f the "Competent
					of _	
Project OGA Luveilors		_	Report	No		
Project No. 3558502M			Day/D	ate <u>Incla</u>	January 3	4.05
Location _311 6.0410 Short Chicago &	Texos _	_	Weath	er/Temp	fan lly Sunry	Cold 2595
Contractor TET		_	Client			
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental		<u> </u>	Arrive Job	9:30	TOTAL CHARGEABLE
NAME:	Tolls \$_	-0-		Depart Job	_3!30	HOURS 4 hour minimum
FIRM:ADDRESS:	Parking \$_	<b>©</b>		Total Hours		8 hour minimun
	Mileage _	15		on Job	6.0	8:0
PHONE: Present on Site QYES Q NO	•			Travel Time	<u>15 _</u> 15	
	Project Prep	Daramon I	<del></del>			
Summary of sampling and testing services performed, include	ding lield lest de	ta. Locatio	ons, eleva	ations and dep	th are estimated.	
Area would: Busal of Canhola  Three Hood to Bo Co  and Be Reflected  Fland By for the  Chariff the Thou	3, 9" of G Decision	hick &	il (Su Jusole Oca L. Quel.	the Dosai Lenole To By Chia Securi	thout it had the brack to and the season the fire	le Cool
• ☐ Fleid Test Data is Estimated - Pending Final Laboratory Test	t Results				etch: Indicate North	
Field Representative			7	0	0 -	
Position		By 🖳	CULARS!		DEURIEW	<del></del>
Company		Title Cu	orkal !	he Hal &	Reishil	
White - Office W	/hite - Field	Yellow - T	îme Card	MTS Repr	esemalive	8/04 5K



NOTE: The responsibilities and authority of MTS and MTS Fi Person* for the project site as defined by OSHA Regu				_	_
			• 4	/_ of	2_
Project OGU Sueribus		— Re	port No		
Project No. ZSSS + MC	<del></del>	Day	y/Date /ko#	don Januar	, 34° 05
Location 341 E. Othio St Chicago &				Hortly Survey	_
Contractor TCT		Clie			
	Equipment	_		0,-0	
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Rental _	<del></del>	_ Arrive Job	9:30	TOTAL CHARGEABLE
NAME:	Tolls \$	<u> </u>	Denart Joh	<u> 3:30</u>	HOURS
FIRM:	<b>.</b>	$\bigcirc$	-		4 hour minimum 8 hour minimum
ADDRESS:	Parking \$		enuoH lator on Job	6.00	
	Mileage _	60		1	8,5
PHONE:	<b>-</b> -		Travel Time	_	
Present on Site UYES Q NO	Project Pre	paration Time		<u> </u>	
Summery of sampling and testing services performed, inclu-	ding field test d	ata. Locations, e	levations and dep	th are estimated.	
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REMORNEL: 1STS STARF					
Area worked: Water hours we	& Branc	4 Excasati	on Douts	of South Co	as lines
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Elevation B	From SF	Eccaptio	, 2. Q8.	feet	
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* Field Test Data is Estimated - Pending Final Laboratory Tes		<u> </u>		tch; Indicate North	· · <del>· ·</del> · · · · · · · · · · · · ·
Field Representative June Bir	9	_	00		
Position	_	By Leacott	wei Su	autio	
Company		Title Eucin	on houtoft	exiated	
			MTS Repr	esentative	
White - Office V	White - Field	Yellow - Time C	ard		8/04 5K



	sponsibilities and authority of MTS and MTS Field Personnel include neither the r	esponsibilities nor the authority of the *Competent
Person	n" for the project site as defined by OSHA Regulations; 29 CFR 1926 Subpart P.	Page
Project	OGOL Luves lons	Project No. 35585 CM
Location	341 E. OlSio St. Cltrago H.	Day/Date Monday Towary 24,05
Su	mmary of sampling and testing services performed, including field test data. Local	<del></del>
Cont!	: from 4 feet to 6 feet layer of Ashes	gray to DK gray Eleva tol
	Geoding @ 10000 CPm unsmilded	
	Euconstred layer follow fill hea	terral belowed By valued
	Found @ 8 feet Beading @ 5000	Por upsitis bled & How 72 16/25
	- A	ud walfs Suvey = P-8.6 feet.
	Do Surparted historial Har fee Guard	
	heatinial: Phushed Stone vol to Be	•
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Soct from	ud: 590 clar unstricted.	
()	ion : 20,279 CPm unstrilled = Taki/2 and	7319CA SAX/dock = 7218/5.
	1 : Ludlum 222/ 15ith a 2" 2" NAL Foo	
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Vole	: his with Court with Cosion 137	AUCRASia L
	· · · · · · · · · · · · · · · · · · ·	
•		
	a is Estimated - Pending Final Laboratory Test Results	7 - 10 -
· ·	entative By La	CHAMMO PONERWELL
Position	Title Z	MTS Representative
Company	<del></del>	
	White - Office White - Field Yellow - Ti	me Card 10/134 2K



NOTE: The responsibilities and authority of MTS and MTS Fi Person* for the project site as defined by OSHA Regu	eld Personnel in	clude neither t	he responsit	bilities nor	the authority of t	he "Competent .
resour to the project site as defined by ConA negu	11400115. 25 ÇFA	1920 Subpart	г.	_	/_ of	<u></u>
Project OGN Eurerlans		— R	eport No			
Project No. 35585 Sem_		D:	ay/Date _	Suesdo	y Jourany	,25 05
Location 341E, Obso St. Chicago All	7				Sunny 30 1	
Contractor 722	-		ient	· <del></del>		
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental	<del>-</del>		Job _	8:30	TOTAL
NAME:	Tolis \$_	-0-	— Depa	rt Job _	<i>31,30</i>	CHARGEABLE HOURS 4 hour minimum
ADDRESS:	_	0_	on Jo	Hours b _	7.60	8 hour minimum
PHONE:	Mileage	60	Trave	l Time	1.5	9.5
Present on Site CIYES CI NO	Project Prep	paration Time				
Summary of sampling and testing services performed, inclu-	ding field test de	ta. Locations.	elevations a	and depth	are estimated.	<del></del>
fearonnel: 1 ors STAPP						
Area woused: Removal of Concrete  Curd or Otto Str						outy of Souty
Excasor ling : Sinvey Courte &	eno sal	e te t	ns Eson	nch of	water ha	in Collage
set Con vele Stort a	co chan	Juntarial	Rodi	ne 27	Ray 7218	·/\$S,
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- Integrate	00'		0	<u></u>	oval, Je	7.9.
- every Troops and	- Reliaseo		an Fo!	ب وب	• • • • • • • • • • • • •	
Ceadin @ 600cr	n unsens	bled at t	How 9	2 /c//	n: Indicate North	
*☐ Field Test Data is Estimated - Pending Final Laboratory Tes	t Results		;	Site Sketci	: Indicate North	
Field Representative			/	A -	_	
Position		By relain	robok	WERRIC	<u>~</u>	
Company		Title <u>Zicine</u>	n Veu log	Peci	oh (	
			MTS	Represe	antative	



	ponsibilities and authority of MTS and MTS Field Personnel in for the project site as defined by OSHA Regulations: 29 CFR	clude neither the responsibilities nor the authority of the "Competent 1926 Subpart P.  Page of
Project _	OGN Eures Cons	Project No. 25585°CM
-	BUI E. OHIO A. CHITAGA ACC.	Day/Date Suesday Lawany 25 05
Sum	mary of sampling and testing services performed, including fi	eld test data. Locations, elevations and depth are estimated.
Cout.	Linvey would and Borrow SE	levold leading sor twice Backfround
		Leading or any other Elovaled Reading
	a le top 3,5 feet Juning !	
	Travitor all Execution	Lowen the utilities existed as 2500
	Edison lines and City Elec	hie hoborof onder neath, the otilities
		Linvey the world with long Cool Sistem
	All Beadings one - than The	
	Bank Del Excasaled frea	with Courts hone upon fixas Surveys.
	Do Entacted 1	with Courts hone upon fixay Serveys.
Box Trusus	L: At 450 CAM ONSHALLED	
<u> Sact france</u>		
Colibrotio	o : Al 20,209 CPD ORSHIRLE	72 Pei/s oud_ 7319 CPm Sthr blad = 9.2 mi/s
Eguiga	reil : Luclling JAH 607 NAC F	Robe 2"x2" 40-10 Senal 174496
Note_	· Colibration way Cosium	- 137 himole Count Averaging
		-
* Field Test Data i	is Estimated - Pending Final Laboratory Test Results	
Field Represer	ntative	Bysedurales (Surane)
Position		Title <u>universelled Secretalis</u> MTS Representative
Company		THE TOP COORDING
	White - Office White - Field	Yellow - Time Card 10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fie Person* for the project site as defined by OSHA Regul					the authority of the	
Project OGN Jugas fors			Report No.			
Project No. 3558500M			Day/Date	Lunsd	ay Jamory	27 05
Location _ 341 E. Othio St Chicago &,			Weather/Te	эmp	Partly Suy	14 150,E
Contractor TRI			Client			
Project Competent Person per 29 CFR Part 1926 (Subpart P)  NAME:  FIRM:  ADDRESS:	Equipment Rental _ Tolls \$ Parking \$	<del></del>	Dep	art Job .	9:00 3:50	TOTAL CHARGEABLE HOURS 4 hour minimum 8 hour minimum
	Mileage _	60	on .		6.5	an
PHONE: Present on Site DYES DINO					1.5	9.0
Treetin on one drea	Project Pre	paration 1	īme	7.0	<u> </u>	
Summary of sampling and testing services performed, include	ling field test d	ata. Locatio	ıns, elevations	and depth	are estimated.	
Area wonted: the EAS! FRN Sonito	ay Sewen	Comp	lteal H	le Doni	3 Portion.	
Excavating : removed Constant	Stone 5	iney S	Sua force .	Rading	@ \$ 100 CA	u vastar blac
- Ilian 7.2 Pc:/gc						
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Q Each Elevation	o_ Read	ling Q.	10600CPM	.40.840	ted for	-12" to offet
Belougrade 5	unvey K	Longi	برواد	ر برمیام	By Suctol	Half full.
and also ple						
Regoling @ Buck	il Expos	eal to	Air les	odin, a	linipiel ool	_ to 6,000 cm
ons this bloo				<i></i>		•
*☐ Field Test Data is Estimated - Pending Final Laboratory Test	Results	/3		Site Sketc	h: Indicate North	
Field Representative Service			<b>7</b> _	00		
Position		By <u>Au</u>	ainais Co	Decree	100)	<del></del>
Company		Title	n'kan keut	S Repres	entative	
White - Office W	/hite - Field	Yellow - T				8/04 5K



	responsibilities and authority of MTS and MTS Field Personnel include on for the project site as defined by OSHA Regulations; 29 CFR 1926	
Project	DEN Enverbons	Project No. 35585444
Location	341 E. ONO St. CHICAGO SC.	Day/Date Twerton Leurary 2705
s	ummary of sampling and testing services performed, including field to	est data. Locations, elevations and depth are estimated.
Coal '	: Boson of Execution VARIES Ku	a of feel to 9 feel See J. Corofully
	ENCANTION OROLLA He Existing	Milities Cowed DBC from of Finney
	wolle and and potings a	rud @ Broom 85 feet
	<i>(</i> )	Seen Covered Guary Excaration - No Su-
	pacted hickoral Hos Been	
	Nove to Grand Ave	Sole Walt South of Vioterty live
	Exported @ AKES Side & Exi	sting driverous Q Easting Com Ed Voult
	Recode's Below Concrete Los	DE 8 000 Com unstrated whom 8.2161/25
-	Reactive to A feet Leading	@ 13000 Consunstituted - How PER'/
	Cindens hise fel.	
Cali broth	tion: At 90,279 CPm UNSHINGE = The	18:185 and 7390 Par Strilland = 9.2, 18:185
Bockfron	und . 4100 CPM UNSMITHOC	
E Jui John	ent: Ludlum 2021 with a 2"x2" NAL	Probe 40-10 Social # 170096
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ste_	· hinch Court with Cosions	-137 Avera (5)
* Field Test Da	ita is Estimated - Pending Final Laboratory Test Resulta	O M
Field Repres	sentative	By Sairent Jerenicoa
Position	<del></del>	Title (eViscon helifal Decialis)
Company		MTS Representative
	White - Office White - Field	Yellow - Time Card 10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fit Person* for the project site as defined by OSHA Regu	eld Personnel i lations: 29 CFF	nclude neith 1926 Subj	er the respon part P.	nsibilities no		
D					of	<u>2</u>
Project OG A LuvesCons		<del>-</del>	Report No	)	7	
Project No. 25585tm				,	Jonuary 28	
Location 34/ E. OHIO Strate (Horas	o L.		Weather/1	Гетър	C811 30°F	
Contractor TRI			Client			
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental _	0	Arı	ive Job	8:00	TOTAL CHARGEABLE
NAME:	Tolks \$	<i>\top_</i>	De	part Job	4:00	HOURS 4 hour minimum
ADDRESS:	Parking \$	_	_	al Hours Job	8.0	8 hour minimun
PHONE:	Mileage _	60	Tra	vel Time		10.5
Present on Site DYES DINO	Project Pre	paration 1	īme		10	
Summary of sampling and testing services performed, include	ding field test d	ata. Locatio	ons, elevation	s and depti	n are estimated.	
PERSONNE : 1515 STAFF			· · · ·			
Area Worked : Completed GAS	hain au	e WA	ex Quais	Done	of Otto S	heet
Qubr line.					<del></del>	
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Excavaling: Remove Queste and	His pleal !	(v Dout	Hrea_	(icon, lot	To removal	auce
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Keading & 6500 CF	_			,,,	•	
removal the	Grs hair	2 Soil	by 18" E	Eft. Lu	ever into the	Escaration
to -3.5 feet Read			,		-	
Eucuntered He	<u>Comovinin</u>	of the	Ecano U	on da	Pau Survi	yed At
In Bucket full Rea	//					
• * Field Test Data is Estimated - Pending Final Laboratory Test		<del></del>			ch: Indicate North	
Field Representative			$\overline{}$	N		
Position		By 🚣	de soci	JOUER	resa)	
Company		Title <u>En</u>	azar last o	1 Secrios	lo-C	
White - Office W	/hite - Field	Yellow - T		1S Repres	sentative	8/04 5K



	responsibilities and authority of MTS and MTS Field Personnel inclu ion* for the project site as defined by OSHA Regulations: 29 CFR 19	
Project	OBA Luces FORS	Project No. 25585 Kee
Location	341 E. Othio Street Chicago He	Day/Date Friday January 28 05
5	Summary of sampling and testing services performed, including field	
Cont'	: Proceed critty the Extrao tion	of the water Juain and Cross-over for
	//	one procedure as the far line -
	Lurvey Courte Before B	based on them haterial havey tol
		ts Readin, Q 8 000 CPM UNSHIELD = Alex
		Ben Sweged By to But & full
	Ponding @ 6500 CP20 UNSHIELD	
	•	vation wing CHG apportion of the Sand
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	- Anc.	
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Note	: Tatin Variable Court with Chi	u-137 Aveninging of Set of Leadings
Bet Janu	ul): 5,280CPm Ups 419 Klad	
 Cali broth		and 7319 CB, Stilled -92 B. K.
CHASIM	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
Egisja.	int: fullyon IDDI NOTE, I'M'S' NAC	Probe 40-10 5#170496
<del>/</del> //	~~~~~	<del> </del>
* Fleid Test Da	ata is Estimated - Pending Final Laboratory Test Results	
Field Repres	sentative	By General Surane
Position		Title Curron hunfal Specialis
Company		MTS-Aepresentative
	White - Office White - Field	Yellow - Time Card 10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fle Person" for the project site as defined by OSHA Regula	eld Personnel in ations: 29 CFR	clude neither 1926 Subpar	the responsibilities nor t,P.	the authority of t	•
Project OGH LuvesCons			Penart No		
Project No. 25585 Vac		_	Report No. June Day/Date Wondon	Janvary 3	3/ 05
Location 341 E. Otto St. Chicago Sin	in 5	,	Weather/Termp.	Timur 31° [	e
Contractor TRE			Client		
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental	<del>0</del>	Arrive Job	8:10	TOTAL CHARGEABLE
NAME:	Tolls \$_	<del>0</del>	Depart Job	4.00	HOURS 4 hour minimum
ADDRESS:	Parking \$_	_	Total Hours on Job	8.0	8 hour minimum
PHONE:	Mileage	60	Travel Time	185	10.00
Present on Site DYES DINO	Project Pre	paration Tim	ne	.75	
Summary of sampling and testing services performed, include	ling field test de	te Location	s elevations and don't	are estimated	
Commany of Sampling and testing services performed, arctic	ang held test da	tte. Location	s, elevations and depti	are esumated.	
personnel: 15TS STAFF					
Area wonked: Donth Schwatt of	Goard A	ve, En	of st Poggen h	line.	
Excording : Removal of spe and EASC of M	otions of	the Sign	le walk Al	the wex Eur	d of Property
and EAST of De	IN Coustre	ution	ale Suevera	al le Care	ule star
Completion Readin	n (2 510	CPn 10	spetal al a fle	au 5/2/8:1	<del>2</del> €.
	7		En cour leved (		3
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	`		•	,	0.40
1/	$\alpha$	-	- unsusibled		<u> </u>
1, 0	, ,	y He. Ku	aterial By B	Wift, Cin	dus and
* Pield Test Deta is Estimated - Pending Final Laboratory Tes	or Tan	<del></del>	Site Sket	ch: Indicate North	
Field Representative	t riousins			on, modele trois	
Position		By Lehu	ense Lucum	$\sim$	
Company		Title Car	rison hout of De	cialis	
White - Office V	White - Field_	Yellow - Tim	MTS Bépre ne Card	sentative	8/04 5K



Person" for the project site as defined by OSHA Regulations: 29	CFR 1926.Subpart P. " Page of of
Project O6 M Luversons	Project No. 3558544
Location 34/ E. OHTO St. CHITAGOR.	Day/Date Londay Jaway 31 05
Summary of sampling and testing services performed, include	ing field test data. Locations, elevations and depth are estimated.
Cont : Quoniton the healigal ne	mud the Com Ed vault Can persollel to the
properly At 3,5 feet for	on the ton of Coul line 18" wide
Two laid Durrounding The	Lity Circleres, Ashes wood CHips very host
Been monitored a le	Poste Holling Lell
A He Excavated Lone,	wal Har Been Euconalosed, At aithou Asea.
Bosom & Exemplien Q	8.5 fat.
Virte : Al hoteral the Been Potion	ned at the Eucarolism upon Released as
clean Fol.	
Bax Janual : At 4/100 CPm onswitted	
Calibration: At 20,279 CAn UNSHIE Hed:	- Tikits and 7919 CPm The Had - 7.2 Rites,
Engred: Ludlum 322/10:4 A 2"42"	NAL Probe 40-108 171496
Field Test Date is Estimated - Pending Final Laboratory Test Results	
Field Representative	By sed ARME Survery
PositionCompany	Title uurses leur fost flexicles MTS Representative



NOTE: The responsibilities and authority of MTS and MTS Flet Person* for the project site as delined by OSHA Regula	ld Personnel include nations: 29 CFR 1926 S	either the responsibilities no ubpart P		•
2			of	
	<del></del>	Report No Day/Date //Urse	161	
Project No. <u>355852-14</u>		Day/Date <u>1 urse</u>	lay TEDWAR	7.05
Location 34/ E. OHIO Street (H)	cago IC:	Weather/Temp	Sunny 31	10/2
Contractor		Client		
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental <u>-</u>	Arrive Job	7.'30	TOTAL CHARGEABLE
NAME:	Tolls \$	Depart Job	4:60	HOURS 4 hour minimum
ADDRESS:	Parking \$ @		8,5	8 hour minimum
PHONE:	Mileage		1.85	10.5
Present on Site DYES DINO	Project Preparatio	n Time	-7-	
Summary of sampling and testing services performed, include	ling field test data. Loc	etions, elevations and dep	th are estimated.	
journel: 1578 STARF	<del></del> .			
Dea Norted: Nort or Ground Are	Dr. 19 Cun 5	Removal.		
Execusing : Rossed of the Few	ward of Frid	LNOK Survey	ed Concar to	l slas
Excasolipg: koesed of the Few Two differents Court	eril layer	with Countred.	Stone Bet	veen layer
Reading 0 45TOC				,
		Completed By	solft to	p. 3 Boe. C.
and him fell Cir	dens stere	Readia, C. 14	100 CPm 0	ps His/dage
		le Back groom		
HANOCHO ORSHI HE				グ 
E 70	Both Col	Electric Q - 5	36" B. Com	ando
*☐ Field Test Data is Estimated - Pending Final Laboratory Tes			etch: Indicate North	710000
Field Representative		$\alpha$		
Position	By ¿	Columns Duri	ma)	
Company	. Title	Sevinon leatuf 3	ecialis	
White - Office V	Vhite - Field Yello	MTS Bépr w - Time Card	resentative	8/04 5K



NOTE: The responsibilities and authority of MTS and MTS Field Personnel Include neither the resp	onsibilities nor the authority of the "Competent
Person* for the project site as defined by OSHA Regulations: 29 CFR 1926 Subpart P.**	Page <u> </u>
Project OGIH June lors	Project No. 95585 Cun
Location 31/E. OHTO Stroot CHILDS - A.	Day/Date Tuesday Fe Soury 1,05
Summary of sampling and testing services performed, including field test data. Location	ns, elevations and depth are estimated.
Const': Lord Eucona Freed Blow 3'6" Wood CHIF	s de his and Brits very
Just Cedin D. 8 000 CAN ONSHIE/Heal	- ·
Bottom at Execution P 8.5 feel Face	
Below B feet Linkey makeral @	<i>\</i>
Reading Has Ben Collected Bout fills	
Excorated stort upon Relaxed as a	
Stock pile, forly linear feet it So	
Eight feet wide to 8. 1 feet deux.	
Do Suspected Moderial Horo	Been Escare torod.
Brekground: At of NOCPON UNSHIElded	<del></del>
Colibration: At 20279 CPm ons Historial = 92 Rifes and	73190Pan Stirled = Marigo.
Equipment: Ludlin JAZIWiP, a 2 x 2 NA Probe H	0-10 5 174496
1) The : Daily Calibration (or 4) Casium-1317 hu	inute Courts Averaging.
* Field Test Data is Estimated - Pending Final Laboratory Test Results	
Field Representative	Jesumi Lesumi
Position Title 4 or	icon hel for bocialis
Company	MTS Representative
White - Office White - Field Yellow - Time	a Card 10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fie Person" for the project site as defined by OSHA Regula				nsibilities nor th	e authority of th	ne "Competent
reson to the project site as delitied by CORA Reguli	800115. 29 OFF	1920 3005	entry. iv :	· 		<u>4</u>
Project DSM Euverlons		-	Report No	o		
Project No. 25585424			Day/Date	Nedan d	lay tobrum	205
Location 341 E. Otho St. Chicago &		_	Weather/	Гетр	Janny S	3005
Contractor 7RT					hounge	
Project Competent Person per 29 CFR Part 1926 (Subpart P)  NAME:	Equipment Rental	@ -0	^!!	rive Job	8:00	TOTAL CHARGEABLE HOURS
FIRM:	<b>5</b> 11 <b>A</b>				7	4 hour minimum 8 hour minimum
ADDRESS:	Parking \$_	<del>@</del>		tal Hours Job	8.80	
PHONE:	Mileage _	60		vel Time		10.75
Present on Site DYES DINO	Project Pre	paration 1	līme		.75_	
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* ☐ Field Test Data is Estimated - Pending Final Laboratory Tes	t Results /	0		Site Sketch	Indicate North	
Field Representative			) [	01	_	
Position		By £	MANIBES	f Swenn	124 ) _	
Company	-	Title	LUTRON K	nto fee	ialir	
White - Office V	Vhile - Field	Yellow -	Time Card	MTSR#prese	mative	8/04 5K



	The responsibilities and authority of MTS and MTS Field Personnel Include neither the resp Person" for the project site as defined by OSHA Regulations: 29 CFR 1926 Subpart P. **	onsibilities nor the authority of the "Competent"  Page of
Project	OBM INVESTORS	Project No. <u>255856 M</u>
Locatio	THE STATE OF CHILL	Day/Date Wednesday Johney & 05
<del></del>	Summary of sampling and testing services performed, including field test data. Location	
<u> </u>		
Cont	the Comminion of the Execution Had to be	E Sinveyed By Bocket flast fall
	" the Remaining of the Econotion Had to be At the Bucket All Leadings diminished	to a very low Redings
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	and line year functioned Concrete	over 6 Asphaft tile.
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	Excavolon as but fill, Coverale &	ayens Have Seen Sigflaced
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	Do Sufacted Traterial Har	Bear From Sweed ).
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Spet	Grand : At 4500 CPM UDSHITHER	
Cali:	notion: At 20279 CAn unstris Idad = 72 icips. and	7819 Cho strilled = Terzips.
3	June : Ludlum 3221 With A 2" 12" NAL Prose 40	0-10 St 104896
186	: CHeck Jonesce Cerison -137 Hove Bene vied	for Average minute Count.
Field 7	Fest Data is Estimated - Pending Final Laboratory Test Results	
Field R	epresentative By/defe	was Sugaria
Position		ion hen for specialis
Compa		MTS Representative
- 2 <b>F</b> -	White - Office White - Field Yellow - Time	e Card 10/0△ 2K



NOTE: The responsibilities and authority of MTS and MTS Fig Person" for the project site as defined by OSHA Regul	eld Personnel include lations: 29 CFR 1926	e neither the respons 6 Subpart P.			
				<u>/</u> of	
Project OGAN Sucressions		Report No.		<u> </u>	
Project No. 32558 Peru		Day/Date	Huarday	<u>, ke bruasey</u>	<u>3 05 _</u>
Location 34/ E. OHio A. CHICAGO H	<u>C-                                    </u>		emp. <u>Fin</u>	<i>'</i> .	
Contractor Per Company Tex	<u> </u>			<u></u>	
Project Competent Person per 29 CFR Part 1926 (Subpart P) NAME:	Equipment Rental Tolls \$	_	ve Job	_	TOTAL CHARGEABLE HOURS
FIRM:	10113 3	Dep	art Job	1:30	4 hour minimum
ADDRESS:	Parking \$	<u> </u>	al Hours	0.	8 hour minimum
<u> </u>		on .	al Hours Job	₫· i	1
PHONE:	Mileage		vei Time		10.5
Present on Site DYES DINO	Project Prepara	tion Time	1.0		<u></u>
	<u> </u>				
Summary of sampling and testing services performed, include	ding field test data.	Locations, elevation	s and depth are	estimated.	
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Don to Queb.	· <del></del>	<del></del>			
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Sincey thea pt 3	<u>We Sun face, y</u>	LAP. PEMORO	Keadi	31. Co. 86	140 CP22
unstrellad xtha	4 7.2 Pei/	<u> </u>			
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BlowGroade O	long aide Co	to Elector	.039	Be low (	rade.
		14 600 CP1 2 CM			
• ☐ Field Test Data is Estimated - Pending Final Laboratory Tes	at Results	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Site Sketch: 1	ndicate North	- 200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Field Representative			20		
Position	Ву	Celement X	Licare	J	
Company	Trt	18 Eurino Jon	Freich,	7	
		M	7S Represent	ative	
White · Office	White - Field Ye	llow - Time Card			8/04 5K



	esponsibilities and authority of MTS and MTS Field Personnel includ on for the project site as defined by OSHA Regulations: 29 CFR 192	
Project	OGay Luce Gus	Project No. 26585424
Location	341 E.OHO Sp. L CHicago H.	Day/Date Hunsdy february 301
S	rummary of sampling and testing services performed, including field t	est data. Locations, elevations and depth are estimated.
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vote	ment: Sudhem 2021 with A 3 x 20 DAL For Dady Casion -13.	7. Minute Coul Averging.
* Field Test De	ata la Estimated - Pendíng Final Laboratory Test Results	0 00 -
Field Repre	sentative	By General Chisania
Position		Title Twiner heutaffterial.
Company		MTS Representative
	White - Office White - Field	Yellow - Time Card 10/04 23



NOTE: The responsibilities and authority of MTS and MTS Fit Person* for the project site as defined by OSHA Regul	ield Personnel include nei ilations: 20 CER 1926 Sui	ther the responsibilities no	or the authority of t	he "Competent"
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Project OGW Lutectors		Report No		
Project No. SETSTELL		Day/Date 1	lay februs	74.05
Location 345 & OFFIO 31 CHICAGO &	2.:	Weather/Temp	,	1 - '
Contractor 122		ClientGair	HECY Duran	szement.
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental ———		8,∞	TOTAL CHARGEABLE
NAME;	Toile \$ elloT	Depart Job	<u>4:60</u>	HOURS 4 hour minimum
ADDRESS:	Parking \$ 👄	Total Hours	8.0	8 hour minimum
PHONE:	Mileage		10	10.0
Present on Site QYES DNO	Project Preparation	Time	1.0	<u></u>
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		<del></del>		
EMPONEL: 1STS STAFF	<u> </u>	····		
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and Tide NOIL	& Removal of	Ence WON End o	of Trajecty a	Lu 70
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* 🔾 Field Test Data is Estimated - Pending Final Laboratory Test	Results		: indicate North	
Field Representative				
Position	8y			·· <del>···</del>
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· White - Office Wi	hite - Field Yellow - Ti	MTS Repress	emative	B/04 SK



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	, , ,		Page <u> </u>
Project	OGY Luvestons	Project No.	S5585844
Location	BUSE. OHTO A. CHENGO SpiNOL		riday february 1 05
s	Summary of sampling and testing services performed, including fiel	d test data. Locations, elevations an	d depth are estimated.
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	athan 71.2 Pri /35.		
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	Proceed to the lemoval of	^	
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	entil Reached Superted	Drea Serity of Proje	sety live.
	his Area was Known do		_
	But Reading Sheen Re		
	At 16,000 CPm unaApis/dud	A-	
· 	Unstribboal -c Ray 1726	er fore 3 feet to He	Oakral Said
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· · · ·		tel Asa Fearlish	to 50 Kunsus lood.
	So cured the Area Son		
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William for	on : 30,3 MCBnoastrobal - Telli	-	6
ريوس ک	1 = Ludlean 202/10799 Q 2"42"	, o -•.	74496
Field Test Data	is Estimated - Pending Final Laboratory Test Results	0 00	
Field Represe	entative	By Louises Sur	en)
Position		Title Tomison less 4	tecialis -
company		MTS Rep	resentative
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	White - Office White - Field	Yellow - Time Card	10/04 255



NOTE: The responsibilities and authority of MTS and MTS Fie Person* for the project site as defined by OSHA Regula				onsibilities n		
Project OGUI Luves lons			Report	No	day to Sugar	
Project No. <u>35585 &amp; m</u>			Day/Da	te <u>Road</u>	Lay to Suan	107.05
Location 345 E. OHio St. Chango Al	·				Cloudy 400	
Contractor TRI			Client	GAIATE	ch humost	mout
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Equipment Rental	0	<u> </u>	Arrive Job	9:00	TOTAL CHARGEABLE
NAME;	Tolls \$	<u>@</u>	<del></del> 1	Depart Job	3:00	HOURS 4 hour minimum
ADDRESS:	Parking \$	#	<u> </u>	Total Hours		8 hour minimum
	Mileage	60			6.0	9.0
PHONE:					<u>_/5</u>	7.0
Present on Site DYES DINO	Project Prepar	ration T	īme		/15	
Summary of sampling and testing services performed, include	ding field test data.	Locatio	ons. eleva	lions and der	oth are estimated.	
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lewonnel: 1515 STAFF						
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oud tile houite	ned and	Sin	veyed	Al Suo	Teral Elle	I the Counter
slad and BAlland						
Reading P. 8000 CF				_		
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Quaing the lift				0		
	2	_				le Buctet
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" * Tried Test Date is Estimated - Pending Final Laboratory Tes	ot Results .	<i>VDO C.</i>		Site Si	cetch: Indicate North	
Field Representative		,	$\overline{}$	00		
Position		ву 🚣	LUMBIA	Leven	nuro	
Company	_ 1	Title 🚄	wigon	Leufal Be	resentative	
White - Office	White - Field '	Yellow - '	Time Card			8/04 5K



NOTE:	The responsibilities and authority of MTS and MTS Field Personnel include neither the responsers for the project site as defined by OSHA Regulations: 29 CFR 1926 Subpart P.	
		Page <u> </u>
Projec	OGIM BRUSSLOUS	Project No. 2553544
Locati	on 345 E.OHO St. CHIZAGO Alf.	Day/Date Honday fobusary 07 05
	Summary of sampling and testing services performed, including field test data. Location	s, elevations and depth are estimated.
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	loaded off- 5te. Area Opening twent	
	and 6 feet wide how Hole Election st	<i>U</i> -
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<u> pote</u>	: Calibrat Ludlum will a Usince -137 him	t Court Arreaging.
Jas	E ground: 4500 CPM UNSMirlded	
Col	Enation : 20,879 CPm on thic Head = 7.2 Biffs and 7,3190Pm	Stribal = 92 Ri/gs.
<u>_</u>	injerent: Ludlum 2221 with a 2" x2" DAL Robe 40-10	J# 174496
Dol	Rad-Rope. Tyust and Booties and	
Fleid	Test Data is Estimated - Pending Final Laboratory Test Results	7
Field I	RepresentativeBy day	nes Leoranies
Positio		non howfor specialis
Comp		MTS Representative
	White - Office White - Field Yellow - Time	Card 10704 2K



NOTE: The responsibilities and authority of MTS and MTS Fix Person* for the project site as defined by OSHA Regul			the "Competent
	1920 300	of	2
Project _ Etal EuresCours		Report No.	
Project No. 35585 KAC		Report No	20,80
Location _ 345 & ONTO Sheet Chinase	2		
Contractor TRE		Weather/Temp. Claudy 5 Client Saistech Roug	age mant
Project Competent Person per 29 CFR Part 1926 (Subpart P)  NAME:  FIRM:  ADDRESS:	Equipment Rental  Tolls \$ D  Parking \$ D  Mileage GO	Depart Job 9:00  Total Hours on Job	TOTAL CHARGEABLE HOURS 4 hour minimum 8 hour minimum
PHONE:	Mileage <u>GD</u>	Travel Time	10.1
Present on Site OYES O NO	Project Preparation	Time	
Summary of sampling and testing services performed, inclu	ding field test data. Locat	ons, elevations and depth are estimated.	<del></del>
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on Grond Aut	2 July Carl-	·	<del></del>
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• ☐ Field Test Data is Estimated - Pending Final Laboratory Te		: Wood Chips Vay Strong. She Sketch: Indicate North	
Field Representative			•
Position	-	June 10 1 Lega	
-	_ <b>Dy</b>	6 1 200 1	
Company		MTS Representative	<del></del> ,
White . Office	White - Field Vellow .	Time Card	8/04 5K



	responsibilities and authority of MTS and MTS Field Personnel include neither on for the project site as defined by OSHA Regulations: 29 CFR 1926 Subpar	₽.	the *Competent .
Don't at	06 11 8 10 11	Project No. <u>253</u> 5	
Project Location	BON E. Otio St. CHILAGO St.	Day/Date Truesday 16	
	Summary of sampling and testing services performed, including field test data.	<u> </u>	
(but	: Datumal Sand Engoundered @	8 fect At Stockin of	Striked_
	Aliac Tie Ri/25.	<u>.</u>	
	Excavoled Drawd He City Elec	hic Al Sent & Walf or	Execution
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	Tet for the Removal for		
	Superted hateral Eurone keed	. * 4	
	Resi recluicion De apensonal	0 -	
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	This Hed > than 7.2 Poiss.		
	A Total of 8 Cubic porch	Have looded it Diger	Jack with
	Oven in flace: pual leading		_
	Quoterial @ of 500 celm str Wed		
SE W	ed: 33ets of Ple Heur pen weel.	<u>.</u>	
BACK fr			
Cali bro	tion : At 30 2 TACHO UNSHIELLED = 72/8	1/8 and 7319cm str	Mad = 72 ki/g
Buig.	ment : Ledlew 3221 with JAD DAL for	be 40-10 St 174896.	
Voles	: Completed paper wont for Souple	delivery-disposal	red Me vito
	: Suparted Soil Super Docts. Co	librale Equipment with	Esion-B7 -
* Field Teat D	rate is Estimated - Pending Final Laboratory Test Results //	0 10 -	
Field Repre	esentative By	hedranos Leenwar	
Position	Tit	Ca oricon bent of facino	
Company_		MTS Répresentativ	e
	White - Office White - Field Yelfo	ow - Time Card	10/04 2K



NOTE: The responsibilities and authority of MTS and MTS Fig.	old Personnel in	clude neithe	er the respo	nsibilities n	or the authority of t	the "Compelent
Person" for the project site as defined by OSHA Regul	HUONS: 29 CFM	1926 Subp	an P.	•	of	2
Project OGH Euverlous		_	Report N	o		
Project No. 355854-ML		_	Day/Date	Hedue	idas, Jebruan	9.05
Location 345 E. Ostio St. (VICAGO St.	Pireou	_			Sunny 5	
Contractor TES		_	Client _	GAIR	tech Tugung	revent
Project Competent Person per 29 CFR Part 1926 (Subpart P) NAME:	Equipment Rental	D D	Ar	τive Job	<u>9:00</u>	TOTAL CHARGEABLE HOURS
FIRM:	Darking 6	$\sim$			7	4 hour minimum 8 hour minimum
ADDRESS:	Parking \$_			otal Hours Nob	<u>75</u>	
PHONE:	Mileage	_60	— тг	avel Time	1.0	9.25
Present on Site OYES O NO	Project Pre	paration T				
					4	<del></del>
Summary of sampling and testing services performed, include	ding field test da	ILA. LOCADO	ns, elevatio	ns and dep	nn are estimated.	
Fasound: 1515 STAFF						
Area wonted: Exhibitor fore 1		oud	_Side	rakt Ka	eword wa	S of Exhaios
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Continued with 18					,	_
At the topo 3.5 feet						_
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					-8 feet Na	
* I Field Test Data is Estimated - Pending Final Laboratory Test		<u>v o</u> v, eso	apoqqa		etch: Indicate North	
Field Representative			7	00		
Position	-	By 🚂	acapet of	Sevenno	<u>4)                                    </u>	
Company	_	Title	vicon las	L/S	cialis	<del> </del>
White - Office	White - Field	Vellour 1	limo Card	MTS Rep	resentative	8/04 5K

#### DAILY FIELD REPORT



		clude neither the responsibilities nor the authority of the "Competent Person"
iQi u	he project site as defined by OSHA Regulations: 29CFR 1926 Sub	Page: Z of 2
Project:	OGU Loves Cons	Project No.: 255858 MC
Location:	34TE Otto St. CHEAGOOSC.	Day/Time: Neducida, it know 905
Sun	mmary of technical and/or engineering services performed, includi	
Coul.	: Reading @ 5400Pm into	He Natural Duch, Unsuper lood Egypnet
	Hove Ban used during the	Sugger.
	Spon Coutletien de	He Area and pur Surveys Bretfelool
	Area with the Excavoled	Though 2.
	We Geve how US	ESA was drugged, Chean, Verification Somet
	R. the Enclusion Enne Pis	EPA was present cluming Verification Samples -16 Area Deven feet a Seren feet & 3 feet
	de C Area Hove Been din	odd by 5 ladions and Combined
-	Material withing the Area	A KOCAM SHINGOL a Han 72 Per /25.
	•	Al Res las in Grove for
		Hain / Custody Leduded line date
	and brotion and To	und By las Felican -
PE wed	· 980 ls of PR Have Beau a	red.
vole	: Used Thibled Equipment	durin Luaveys in the Exchaigen Course
	and durin I Spurting for	durin Lurveys in the Exchargen Come
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Lack Drive	id : A500 CPON UPSHIS/dool	
Pali Gratio	- AR 20279 CAM U/SHIELD - S	2,8:/35, and 7319 CAn Strided = 7.2 Ri/g5.
Fari Treat	wed: frollier \$221 with 8'X2" D	AL 1805e, 40-10 SH 174496
/ /	and HA Alpha Pancate for	obe for Ayziene ) danposes body Since 4
devily Califord	otion: Hine a Cesina -137 for The	with Court Aventin
. /		
☐ Fleid Test Da	ata is Estimated – Pending Final Laboratory Test Results	
		O . A -
Field Repres	sentative	By thurse of Sugara
Position		Title Cuoros Lestof Jecolo
Company		Material Testing Services, Inc.



NOTE: The responsibilities and authority of MTS and MTS Fie Person* for the project site as defined by OSHA Regula		oart P.		_
Project OGW Saves Cons			of	<del>^</del>
Project No. 25575844		Report No Day/Date <u>Lunal</u>	a felouser 1	1 05
Location 345 6. OHO St. Chinaso Sel				
	···	Weather/Temp.	~	
Contractor TRE	Equipment	Client <u><i>Sainte</i></u>	<i></i>	
Project Competent Person per 29 CFR Part 1926 (Subpart P)	Rental	Arrive Job	7.30	TOTAL CHARGEABLE
NAME:	Tolls \$	Depart Job	Sizo	HOURS
FIRM:			<u></u>	4 hour minimum 8 hour minimum
ADDRESS:	Parking \$	on Joh	9.00	
	Mileage ろ			11.5
PHONE:		-		-
Present on Site Cites and	Project Preparation	Time	<del>-</del>	L
Summery of sampling and testing services performed, include	ding field test data. Locati	ons, elevations and depth	n are estimaled.	
PEWDUNCE: 1STS STAFF				
Jeworking , 1818 SAPE		_		·
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	1.6	,		
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	mits He Ever			
Ther feet to the world	/ Eschision			
Acced will the Execute	V			
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Oto Perinoles of Oc	stity (GEE 4ch)	i) HE He top	& feet lloss	<del>eg</del>
@ 15000CPm unstril	Wood chear T	2/6/135	<b></b>	
Blas 3. The Dens	much O Us or	e 8. XA 8.00.	2. d. Q	EMORPE
* * Field Test Data is Estimated - Pending Final Laboratory Tes	Results	Site Sket	ch: Indicate North	
Field Representative				
Position	-			
Company	Title	MTS Repre		
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NOTE: The responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities and authority of MTS and MTS Field Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated by OSHA Personnel include neither the responsibilities are delicated	onsibilities nor the authority of the "Competent
Person" for the project site as defined by OSHA Regulations: 29 CFR 1926 Subpart P.	Page <u>2</u> of 2
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	MTS Representative
Company	M 15/hepresentative

Appendix G

**Photo Documentation** 



Photo 1: Looking West as soil is excavated and screened along north RAC. 12/15/04



Photo 2: Looking west as soil was excavated and screened along the south RAC. 12/16/2004

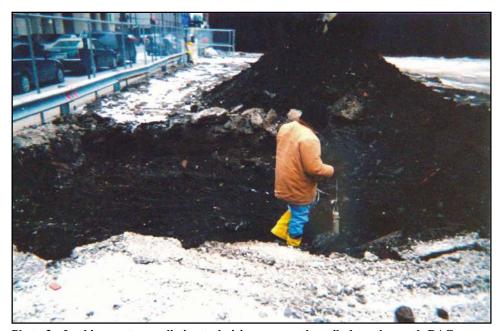


Photo 3: Looking west as radiation technician screens the soil along the south RAC utilizing Ludlum 2221 meter. 12/16/04



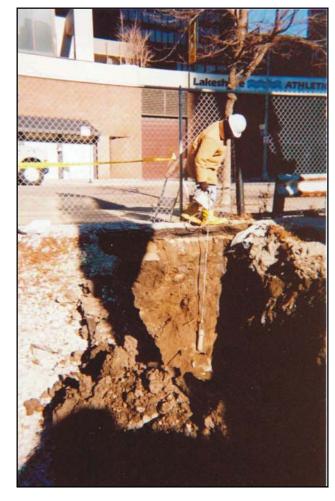


Photo 4: Looking north as "long cord" Ludlum meter was utilized along excavation side wall (north RAC). 12/16/04



Photo 5: Looking north as impact area #1 was removed and placed in Super Sack. 12/16/04



Photo 6: Looking south as second impact area has "hot" sample collected by radiation technician as USEPA observes. 12/17/04





Photo 7: Looking west as soil is excavated and screened in 18" lifts along west RAC. 12/19/04



Photo 9: Looking south as workers with PPE excavated impacted soils from Area #2. 12/20/04



Photo 8: Looking north as radiation technician checks west side wall of west RAC with long cord probe and Ludlum meter. 12/19/04



Photo 10: Looking down at finished remedial excavation for Area #2. 12/20/04





Photo 11: Looking on as remedial excavation #2 is backfilled. 12/20/04



Photo 13: Look at designated area for removal of impact Area #3 (north RAC). 12/20/04



Photo 12: Looking southeast as Super Sack partially filled with soil from remediated area #2 is placed into dumpster. 12/20/04



Photo 14: Looking west as excavation of impact begins in Area #3. Note: worker using "pancake probe" on bucket.





Photo 15: Looking west as soil from impact Area #3 is placed in Super Sack. 12/20/04



Photo 16: Looking at finished remedial excavation for Area #3.



Photo 17: Looking east as Larry Jensen of the USEPA prepares to take a verification sample in Area #3.



Photo 18: Looking north at finished and backfilled remedial Area #3.





Photo 19: Looking west as remedial contractor prepares to remove Ohio Street sidewalk (ROW). 01/05/05



Photo 21: Looking east as Ohio Street ROW is surveyed/screened by radiation technician. 01/05/05



Photo 20: Looking west as remedial contractor removes planter boxes and trees in Ohio Street ROW.



Photo 22: Looking east as contractor prepares to load up concrete debris from Ohio Street ROW. 01/06/05





Photo 23: Placing fabric barrier along future RAC in Phase II area adjacent to McCormick Street. 01/07/05



Photo 25: Screening/survey soils in Ohio Street ROW near Time-Life Building. 01/10/05



Photo 24: Placing fabric barrier along future RAC in Phase II area adjacent to McCormick Street. 01/07/05



Photo 26: Screening/survey soils in the central section of Ohio Street ROW. 01/11/05





Photo 27: Looking west at finished survey/screened Ohio Street ROW area. 01/12/05



Photo 28: Looking west as utility trenches are sawed out in Ohio Street. 01/12/05



Photo 29: Looking down at screened and excavated utility trench adjacent to telephone vault. 01/14/05



Photo 30: Looking down at screened section of utility trench adjacent to second telephone vault. 01/17/05





Photo 31: Screening end of sewer trench with long cord probe. 01/18/05



Photo 33: Loading up broken concrete from second water line trench. 01/21/05



Photo 32: Looking east as water line utility  $\,$  trench is backfilled after surveying.  $\,$  01/19/05



Photo 34: Looking west as fresh concrete is poured into sewer and water utility trenches. 01/21/05





Photo 35: Looking north as City crew replaces lightpole base. 01/24/05



Photo 36: Looking east as water line trench surveyed. 01/25/05



Photo 37: Looking east at water line trench after surveying. 01/25/05



Photo 38: Looking south after surveying sewer trench. 01/26/05





Photo 39: Looking west as surveying/screening is completed on the north end trench for water lines. 01/28/05



Photo 41: Looking into survey excavation prior to surveying/screening soils in bucket. 01/31/05



Photo 40: Looking west as radiation technician begins survey of Grand Street ROW. 01/27/05



Photo 42: Preparing to load out for disposal of non-radioactive soils from soil stockpile. 02/01/05





Photo 43: Surveying bucket of soil from Grand Street ROW. 02/02/05



Photo 45: Looking west as excavation removes soil from screening/survey trench. 02/02/05



Photo 44: Looking south as workers hand dig around utilities in Grand Street ROW. 02/03/05



Photo 46: Looking east at cold patched trenches in Ohio Street. 02/03/05





Photo 47: Looking east at sewer trench cold patch job. 02/03/05



Photo 49: Looking west as radiation technician surveys Grand Street utility trench.  $02/03/05\,$ 



Photo 48: Breakup pavement in proposed sewer trench in Grand Street. 02/03/05



Photo 50: Looking into excavation located in Grand Street ROW as radiation technician surveys excavation. 02/04/05





Photo 51: Looking south as radiation technician surveys Grand Street utility trench. 02/04/05



Photo 53: Looking south as old streetcar rails are removed from south end of Grand Street utility trench. 02/07/05



Photo 52: Looking east after Quickset concrete is installed on the northern half of Grand Street utility trench. 02/04/05



Photo 54: Looking down at south end of Grand Street utility trench as pavers are removed from excavation. 02/07/05





Photo 55: Looking down at excavation in Grand Street utility trench adjacent to ComEd vault (Grand Street). 02/07/05



Photo 56: Looking into Grand Street utility trench as worker probes for utilities. 02/07/05



Photo 57: Looking south at finished Grand Street trench patched with concrete and covered by road plates. 02/07/05



Photo 58: Looking west as survey trench is excavated and surveyed in proposed Eastern Driveway of Grand Street ROW. 02/08/05





Photo 59: Looking on as radiation technician and worker prepare to deliniate and excavate impacted soils in Grand Street ROW (Area #4). 02/08/05



Photo 60: Looking west as excavation of impacted soils proceeds. 02/08/05



Photo 61: Looking east at finished remedial excavation (Area #4), in Grand Street ROW. 02/08/05



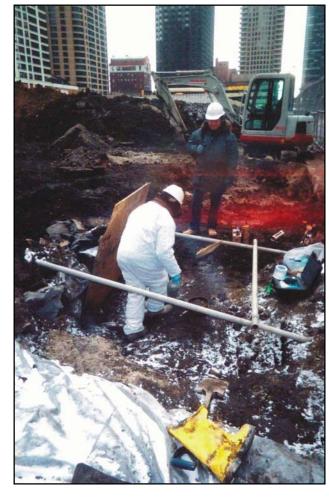


Photo 62: Looking east as verification sample is collected for Area #4 as USEPA Representative observes. 02/09/05



Photo 63: Looking east as last ROW area is surveyed along Grand Street. 02/10/05



Photo 64: Looking west as workers prepare Grand Street ROW for new sidewalk.





Photo 65: Looking east as concrete workers place and finish concrete sidewalk in Grand Street ROW. 02/10/05



Photo 66: Looking west as workers place and finish Grand Street sidewalk. 02/10/05



Photo 67: Looking east at cured sidewalk and cleaned up area in Grand Street ROW. 02/14/05



Appendix H

**ESSI Air Monitoring Results** 

### Personnel air monitoring results

Name	min	l/min	ml	Date	μCi	μCi/ml	μCi*hr/ml
Dumas Gerrier	281	2.00	5.62E+05	12/16/04	< 1.7E-06	< 3.02E-12	< 1.42E-11
Lane DeBartolo	281	2.00	5.62E+05	12/16/04	< 1.7E-06	< 3.02E-12	< 1.42E-11
Dumas Gerrier	120	2.00	2.40E+05	12/20/04	< 1.7E-06	< 7.08E-12	< 1.42E-11
Lane DeBartolo	127	2.00	2.54E+05	12/20/04	2.2E-06	8.66E-12	1.83E-11
Dumas Gerrier	135	2.01	2.71E+05	02/08/05	< 1.2E-06	< 4.42E-12	< 9.95E-12
Lane DeBartolo	134	2.02	2.71E+05	02/08/05	< 1.2E-06	< 4.43E-12	< 9.90E-12

### Appendix I

**USEPA Area Release Form** 



DEC-22-2004 08:22 FROM:USEPA REGION 5

### EMERGENCY RESPONSE BRANCH REGION 5, CHICAGO, ILLINOIS

FAX NUMBER; 312-353-9176

TO: Steve Kornder
FROM: Verneto Simon
DATE: 12/22/04
PHONE NUMBER: (847) 279-2510
TOTAL NUMBER OF PAGES (INCLUDING COVER)
COMMENTS: 345 East Ohio Verification
<u> </u>
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### FORM 223-1 NOTIFICATION OF SUCCESSFUL VERIFICATION SURVEY

Area Identification;	A-12	
Date of Verification Survey:	12/20/04	_ <del></del>
Time of Verification Survey		00aniტ
The above-described excavation w survey indicated that all soils have Criteria.		
Documents pertaining to this survey	are altached for review and	d approval by the U.S. EPA.
Signed:		
Lounder & Succession	. 19 /3/	04 Date
DUNALIAIS F. GULLIE	<u> </u>	(Print Name)
Tite Condington		(Print Title)
ER	STS Çocustante, Solutions Brough Science & Engine	Ltd.
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uthorization is hereby granted to co	mmence backfill and restor	ation work at this excavatio
igned:		
benut Simon		Date 12/22/04
Veeneta Simon		(Print Name)
On-Scene Coordina	atoe	(Print Title)
or U.S. EPA Region V		<del></del>

### Appendix J

Radioactive Soils Disposal Manifest and Chain of Custody

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Appendix K

**Soil Waste Manifests** 

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	16. GENERATOR'S CERTIFICATION: I hereby decorproper shipping name and are classified, packet	d, marked, and labeled, and a						-
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	be economically practicable and that I have se and future threat to human health and the envi select the best waste management method tha	lected the practicable method fronment; OR, if I am a small o	of treatment, storage, or c quantily generator, I have (	isposal cur	rently available	to me which min	imizes the prese ste generation ar	ent i
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18. Transporter 2 Acknowledgement of Receipt of Materials

Printed /Typed Name

19. Discrepancy Indication Space

### STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/91

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'L	EASE TYPE (Form designed for use on clife (12	-pitch) typowniter.)	EPA Form 8700-22	(Rév. 6-89)	Form	Approved. OM <u>B N</u>	<u>lo. 2050-003</u>	9	
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	3. Generator's Name and Malling Address  Golub OMG Ste	2000 Location		Chiost	A Jillnois	Manifest Docu	ment Num	ber FEE PAID IF APPLICAB	
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	10 DOT D	<u></u>			L	y's Phone 31	$\overline{}$	<u> 31 5110</u>	<u>'</u>
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	15. Special Handling Instructions and Additional Info	rmation	·	<u>.</u>					٦
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	16. GENERATOR'S CERTIFICATION: I hereby dec	are that the contents	al this consingment are fully	v and accurately d	/ loscithed at	youg hu			$\dashv$
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SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81

IL532-0610

PLI	EASE TYPE (Form designed for use on elita (12	-pitch) typewriter.)	EPA Form 8700-22 (R	ev. 6-89)	Fоrm Аррп	oved. OMB No. 2050	H0039 %
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	3. Generator's Name and Malling Address	Locat	ion II Different	25.7	A filinois Ma	nilest Document t	Vumber FEE PAID IF APPLICABLE
	4. 24 HOUR EMERGENCY AND SPIJE ASSISTAN	C.	CA. INST 16	10 611	9. Generator ID Numbe	51L 110316	28-121211
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Ļ	20. Facility Owner or Operator, Certification of recei	pt of hazardous mate	erials covered by this manifest e		in Item 19.		Date
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L	This Agency is authorized to require, pursuant to Illinois R	avised Statute, 1989,	Chapter 141 1/2, Section 1004 and	1021, that this	Information be su	bmilled to the Age	ncy: Failuro to provide
	This Agency is authorized to require, pulsuant to lilinois H this information may rosull in a citil penalty against the c per day, of violation and imprisonment up to 5 years. This i	ourn has baen approve	to exceed \$25,000 per day of violed by the Forms Management Cente	anon, Publijcat Ir.	ion ai mis intotm	innou may tosut it	

### STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 6781

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### STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

Stale Form LPC 62 6/81 IL532-0610

LEASĒ TYPE	(Form designed for use on elite (12-	pitch) typewriter.)	EPA Form	8700-22 (Rev.	6-89)	Fo	rm Approved, OMB I	lo. 2050-00	139	
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### STATE OF ILLINOIS ENVIRONME

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8781

PL	EASETYPE (Form de:	signed for use on elite (12	-pitch) typewriter.)	EPA Form 8700-22	(Rev. 6-89)	Form Ap	proved, OMB No. 20	50-0039	
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#### ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL STATE OF ILLINOIS FOR SHIPMENT OF HAZARDOUS P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761 AND SPECIAL WASTE LPC 62 9/81 JI 532-0610 EPA Form 8700-22 (Rev. 6-89) (Form designed for use on elite (12-pitch) typewriter.) Form Approved, OMB No. 2050-0039 ÚNIFORM HAZARDOUS 1. Generator's US EPA ID No. Information in the shaded areas is not required by Federal law, but is required by Document No. **WASTE MANIFEST** Illinois law Illinois Manifest Document Number Location If Different 345 E Ohio St. 3. Generator's Name and Mailing Address 05108 FAPPLICABLE Ste 2000 trolu b Chicago IL 25 N. Michigan Ale Chicago IL 60611 Generator's II Transporter's ID Number 5. Transporter 1 Company Name US EPA ID Number serkele: Transporter's Phone ( 30) 941 7. Transporter 2 Company Name 8. US EPA ID Number Transporter's ID Number 9. Designated Facility Name and Site Address US EPA ID Number F. Transporter's Phone 10 G. Facility's IL 7,802,0002 ID Number H. Facllity's Phone 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) 12. Containers 13 14 I. Waste No. Total Quantity Wt/Vo Type EPA HW Number a. C- Soi 001 (m)E b. EPA HW Number N E 00! R EPA HW Number C. A T C- SOI OOAo d. EPA HW Number A C-50i 00 I J. Additional Description for Materials Listed Above K. Handling Codes for Wastes In Item #14 Listed Above SZL 003010 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree/ have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, If I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Date Printed /Typed Name Da Signature d. 6 17. Transporter 1 Acknowledgement of Receipt of Materials Date Day Mar Printed /jTyped Name Signature OK. ς. 0209

18. Transporter 2 Acknowledgement of Receipt of Materials Date Printed /Typed Name Signature 19. Discrepancy Indication Space A 20. Facility Owner or Operator: Certification of repetit of hazardous materials covered by this manifest except as noted in item 19. Date Printed /Typed Name Signature This Agency is autholized to requide phreciant to filled Revised Statute 1989, Chapter 111 F/2. Section 1004 and T027, that this information be submitted to the Agency. Failble information may result in a civil bonalty against the owner or operator not to oxceed \$25,000 per day of violation. Faisification of this information may result in a fine per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

### STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

State Form

P.O. BOX 19276

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761 LPC 62 8/81

PL	EASETYPE (Form designed for use on elite (12	pitch) typewriter.)	PA Form 8700-22 (Rev	<del></del>	Fann Арргоч	ed. OMB No. 2050-	0039	
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SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

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# STATE OF ILLINOIS

STATE OF ILLINOIS  $^{8}(\mathbb{R})$  Environmental protection agency division of Land Pollution Control

P.O. BOX 1927

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

LPC 62,8/81 ILS

<u>'L</u> E	EASE TYPE (Form designed for use on elite (12	pilch) typownier.)	EPA Form 8700-22 (Rev.		F	orm Approved, OMB N	o. 2050-0	0039
A	UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID		Aanifest ument No.	2. f	of Information required to	ry Federa	shaded areas is not I law, but is required by
	V 0.1-4	Location of D	575 E. UA		A IIII	nols Manifest Docu	ment No	FEE PAID FEE PAID IF APPLICABLE
	625 N. Michigan Ave C. 4.124 HOUR EMERGENCY AND SPILL ASSISTANT	HICAGO IL GOD CENUMBERS	11 - Chillings	611	ID	Number   0,3  ansporter's 7 0	16.	2.8.0.0.2.1
	5. Transporter 1 Company Name	6.	US EPA ID Number	•	ID	Number = 7	1/	
Н	7. Transporter 2 Company Name	8.	US EPA ID Number			ansporter's Phone ansporter's	630	9411230
П	7. Hansporter 2 Company Wayler .		"		<sup> D</sup>	Number	<del></del>	
Ц	9. Designated Facility Name and Site Address	10.	US EPA ID Number			ansporter's Phone	•	<u>,                                     </u>
			100 m			Number 09	7.80	250005
Ш				1 40 0	J,	acility's Phone 84	ومسيخ	131 5/10
Ш	11. US DOT Description (Including Proper Shipping	Name, Hazard Class, and I	D Number)	12. Conta	1	13. Total	14. Unit	I. Waste No.
Н	a. ,			No.	Туре	Quantity	WI/Vol	EPA HW Number
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E	b.			0.01	( bv	<u> </u>	┤┤	EPA HW Number
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Ε	C-Soil		.s	0.01	Cm	1.1.1		
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R	d.		,				$ _{M} $	EPA HW Number
1	c-soil	-	J.S.	001	Cm			
Ш	J. Additional Description for Materials Listed Above	<u>'</u> '.	A Company	•		ndling Codes for W	asies Li	sled Above
Ш	(7) == 2010	ا نورون .	ر قول		ļ ''''			
H	SZL 003010			٠٠٠.	1			
Ш	Ta.	: ? *		٠.,				A
	15. Special Handling fristructions and Additional Info	mation	: ( <b>t</b> a			. Go		
[]		· ·	.( <b>B</b> .			) (m)		
		.3	es i			7.4		
	16. GENERATOR'S CERTIFICATION: I hereby deciproper shipping name and are classified, packed according to applicable international and national of I am a large quantity generator, I certify that the economically practicable and that I have selected international transfer of the province of the best waste management method that	, marked, and labeled, and government regulations. have a program in place cted the practicable metho priment; OH, If I am a sma	i are in all respects in prope to reduce the volume and od of treatment, storage, or Il quantity generator, i bave	r condition for toxicity of w disposal cu	or trans aste ge rrentiv :	port by highway merated to the deg available to me whi	ch minin	nizes the present e generation and Date
¥	Printed /Typed-Name	215c 11-	Signature /	, V3	3 ,	- Land		Month Day Year
<u> </u>			ک مقالمتعلق در در ا	· .	بعديم سزر	11/1/12	<u> </u>	20 <b>\$</b> ~5
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PORT	18. Transporter 2 Acknowledgement of Receipt of M	reujals	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Π,		-		Dato
<u>[</u> ]	Printed /Typed Name		Signature/			:	'	Month Day Year
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ے	19. Discrepancy Indication Space					: /		
F A C				•		6		
Ĭ	·		<u> </u>		/	20	٠.	1
+l	20. Facility Owner or Operator: Certification of receip	of hazardous materials of	<del></del>	pt as noted	in ilem	19.		Dato.
Y	Printed /Typed Name	1 1	Signature	<u>\</u>			```~~ <u>~</u> ;	manun yay xoar
- 1	his Agency is authorized to require, pursuant to litinois Ac his information may result in a civil penalty against the o for day of violation and imprisonment up to 5 years. This fo	wher or opaintor not to axco	od \$25,000 por day of violatic	21, that this on. Faisificat	on of th	on bo submitted to the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of the land of	a Agency sault in a	y. Falluro lo provide i line up 10 \$50,000



701 Green Bay Road Zion, IL 60099 Return Service Requested Onvx Zion Landfill, Inc. www.onyxwasteservices.com (847) 731-5110

ACCOUNT NO	INVOICE NO
T1000398-0	007602
MYONETT	
EBPP WEB PIN #	SITE NUMBER
0370	0000

THERMAL REMEDIATION, INC. 956 S BARTLETT BARTLETT, IL 60103-6500

#### **DUE DATE 02-28-05**

If payment is not received within 30 days of invoice date you may be assessed a service charge of at least \$5 or 1.5% of the unpaid balance.

#### Edinform Hiller Health Intelligible State Intelligible

	PAGE 1 OF	2
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REFERENCE	QTY	
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02-01-05	C5	C-Soilex	327642 O TN	18.34		
02-01-05	C5	C-So11ex	327649 0 TN	16.13		
02-01-05	Ç5	C-SotTex	327655 O TN	16.62		
02-01-05	C5	C-Soilex	327726 O TN	17.55		
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02-01-05	C5	C-Soilex	327745 O TN	19.74		
02-01-05	, C2	C-Soilex	< 327751 O TH	15.65		
02-02-05	C5	C-Soilex	327959 O TN	17.09		
02-02-05	C5	C-Soilex	327991 O TN	17.33		
02-02-05	C\$	C-Soîlex	328069 0 TH	20-44		
02-02-05	C5	C-Soilex	328108 O TN	17.12		
02 - 02 - 05	C5	C-Soilex	328184 O TN	17.89		
02-03-05	C5	C-Soilex	328258 0 TN	20.13		
02-03-05	C5	C-Soilex	328281 O TH	22.15		
02-03-05	C5	C-Soilex	328285 O TN	17.97		
02 - 04 - 05	C5	C-Soilex	328705 O TH	19.36		
		**Site Total				
		· Material Summary				

313.06 TONS

#### Accounts over 30 days past due may be assessed a service charge.

CURRENT	30 DAYS	60 DAYS	90 DAYS	BAI VNCE DIE
	\$0,00	\$0.00	\$0.00	

#### Please return this portion with your payment. Thank you!

Please contact Customer Service if you have a change of address.

THERMAL REMEDIATION, INC. 956 S BARTLETT BARTLETT, IL 60103-6500

**DUE DATE 02-28-05** 

CHECK CARD USING FOR PAYMENT ING BY CREDIT CARD, FILL OUT BELOW PARTER N2N [] UNSTER CARD

NATERICAN EXP. EXP. DATE INVOICE # ACCOUNT# CHECK # T1000398-0 007602 DAL ANICE DUE AMT, ENCLOSED

Remit To:

Onyx Waste Services Midwest, Inc. T1 8246 Innovation Way Chicago IL 60682-0082



701 Green Bay Road Zion, IL 60099 Return Service Requested Onyx Zion Landfill, Inc. www.onyxwasteservices.com (847) 731-5110 Date 02-21-05

CCCOUNT NO INVOICE NO 007640

EBPP WEB PIN # SITE NUMBER 0370 0000

DUE DATE 03-14-05

THERMAL REMEDIATION, INC. 956 S BARTLETT BARTLETT, IL 60103-6500

If payment is not received within 30 days of invoice datayou may be assessed a service charge of at least \$5 or 1.5% of the unpaid balance.

PAGE 1 OF 6

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· 02-07 <del>-05</del>	G <del>S</del>			
02-07-05	C5	C-Soilex	329058 O TN	13.66
02-07-05	C5	C-Soilex	329064 O TN	15.72
				63.11

Accounts over 30 days past due may be assessed a service charge.

CURRENT	30 DAYS	60 DAYS	90 DAYS	BY VICE UNE
	\$0.00	\$0.00	\$0.00	

#### Please return this portion with your payment. Thank you!

Please contact Customer Service if you have a change of address.

**DUE DATE 03-14-05** 

CREDIT CARD, FILL OUT BELOW

CNECK CARD USING FOR PAYMENT

WASHER CARD

EXP. DATE

CHECK #

1000398-0

O07640

LIE

AMT, ENCLOSED

THERMAL REMEDIATION, INC. 956 S BARTLETT BARTLETT, IL 60103-6500

Remit To:

Onyx Waste Services Midwest, Inc. T1 8246 Innovation Way Chicago IL 60682-0082

### Appendix L

**Concrete Debris Trucking Tickets** 



MEMMEST CONTROLS, VILICAN CONSTRUCTION MATERIALS, LP 747 E 22nd STREET, SUITE 250 - LOMBARD, IL 80148 0149 - YELEPHONE (630) 281-8600

SKIP TO:

E ON ONIO TO MCLURG CT EMPTY 345 E ONIO ST

SOLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 BARTLETT IL 60103-6500

SALES REP: CRAIG REYMOLDS (815-895-6501)

CUSTOMER NO: 0088389

INVOICE DATE: 01/18/05

INVOICE NO:

445236

INVOICE AMT:

PAYMENT DUE: 02/17/05

To ensure proper credit, please provide a remittance advice. In the obsence of remittance advice, payments will be applied to the oldest invoke tirst. Please return top portion of invoke with payment to:

TOTAL AMOUNT

| Page 1 of 1

VULCAN CONSTRUCTION

HATERIALS, LP

75 REMITTANCE DRIVE

SUITE 3155

CHICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH RELATITANCE

TAX EXEMPT LD.:

PLANT: PERSHING RD BROKEN CONCRETE

INVOICE NO.	INVOICE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP.	PURCHA	ASE OR	DER MUMBER	LADONG	FREIGHT
445236	01/18/05	120	0088389	786560	007					DELIVERED
DAYE SHIPPED	TICKET	VEHICLE NO.	PROO. GODE	DE	CRIPTION		UNIT	OUANTRY	PRICE	THUCHIA
01/06/05	770053 VA 770077 VA 770095 VA 770106 VA 770116 VA 770119 VA	N49 N50 N49 N50	030	COMC NIME-	SSMC.	I	CAD	1.00 1.00 1.00 1.00 1.00 1.00 6.00*		
01/07/05	770138 VX 770147 VX 770157 VX 770163 VX 770175 VX	н43 л43 л43	030	CONC DUMP-	SENI		CAD	1.00 1.00 1.00 1.00 1.00 5.00*		
	•									·
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								TOTAL UNITS	25	



ARDWEST DIVISION, VULCAN CONSTRUCTION MATERIALS, LP 747 E 22nd STREET, SUITE 200 • LOMBARD, IL 60148 0149 • TELEPHONE (600) 261-8600

345 E OBTO ST 345 E ONIO ST

SOLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 01/31/05

INVOICE NO:

447938

INVOICE AMT:

PAYMENT DUE: 02/28/05

To ensure proper credit, please provide a remittance advice. In the absence of remittance advice, payments will be applied to the oldest invoice first. Please return top portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LP 75 MEMITTANCE DRIVE SOITE 3155

CEICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH REMITTANCE

TAX EXEMPT I.D.:

SALES REF: CRAIG REYNOLDS (815-895-6501) PLANT: PERSBING RD BROKEN CONCRETE

UNVOICE NO.	DIVOICE DATE	NOLDS (8)						D BROKEN CON		,
				SALES ORDER NO		PUALI	HASE OR	DER HEALRICH	(ADING	FREIGHT
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	_		-							TRUCIAL
01/31/05	TICKET	VEHICLE NO.	PROD. CODE 030		SCRIPTION		LOAD	2.00 1.00 2.00 3.00*	PRICE	AMOUNT
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MIDWEST DIVISION, VULCAN CONSTRUCTION MATERIALS, LP 747 E 22rd STREET, SUITE 200 - LONGARD, K, BOHAR 0749 - TELEPHONE (630) 261-8600

SHIPTO

345 E QHIO ST 345 R DRIO ST

SQLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 HARTLETT IL 60103-6500

CUSTOMER NO:

0088389

INVOICE DATE: 02/08/05

INVOICE NO:

450378

INVOICE AMT:

PAYMENT DUE: 03/10/05

To ensure proper credit, ploase provide a remittance edvice, in the absence of remittance advice, payments will be applied to the oldest knotce first. Please return top portion of invoice with payment to:

VULCAS CONSTRUCTION WATERDALS, LP

75 BEMITTANCE DRIVE

SUITE 3155

CHICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH REMITTANCE

TAX EXEMPT I.D.:

NVOICE NO.	INVOICE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP.	PURCHAS	SÉ ORO	ER MUMBER		LÄDING	FRECHT
450378	02/08/03	120	0088389	786560	007						PICKUP
TE SHIPPED	TICKET	VEHICLE NO.	PROD. CODE	DE	SCRIPTION	<u> </u>	PaT	YTTTHAND	<del></del>	PRICE	AMOUNT
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MICWEST DIVISION, VIR.CAN CONSTRUCTION MATERIALS, LP 747 E ZZIII STREET, SUITE 200 - LOMBARD, IL 60148 8149 - TELEPHONE (630) 281-6500

SHEP TO:

345 E OBIO ST CHICAGO

345 E OBIO ST

SOLD TO:

TEERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 12/21/04

INVOICE NO:

440009

INVOICE AMT:

PAYMENT DUE: 01/20/05

To ensure proper credit, please provide a remittance advice, in the absence of remittance advice, payments will be applied to the oldest invoice first. Please return top person of involve with payment to:

VULCAN CONSTRUCTION MATERIALS, LP 75 REMITTANCE DRIVE

SUITE 3155

CHICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RÉTURN WITH REAUTTANGE

TAX EXEMPT I.D.:

INVOICE NO.	INVOICE DATE	PLANT NO.	CUSTOMERNO	SALES ORDER NO	SALES REP.	PURCHASE (	RDER NUMBER	LADO	YG	FREIGHT
440009	12/21/04	378	0088389	786560	007					DELIVERE
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	784148 H36	3				1	23.4			
	784171 BRE	21/3		>		1	20.4			
	784185 MAF	148	· .			- 1	23.5			
- 1	784189 MAP	231				1	.21.			
ŀ	784202 H60	)					22.0			
	784241 MO	204	ĺ				23.0			
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### INVOICE

MIDWEST DIVISION, VILCAN CONSTRUCTION MATERIALS, LP 747 E 23-1 STREET, SUITE 200 • LONBARD, IL 60148 0149 • TELEPHONE (\$30) 261-8500

SHIP TO:

345 E ORIO ST CHICAGO

345 P ORTO ST

SOLD TO:

TEKRMAL REMEDIATION INC. 956 S BARTLETT RD 5 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 01/18/05

INVOICE NO:

445237

INVOICE AMT: .

PAYMENT DUE: 02/17/05

To onsure proper credit, pleaso provide a remittance odvice. In the absence of remittance advice, payments will be applied to the oldest Invoice limit. Please return top portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LP

75 REMITTARCE DRIVE SUITE 3155

CHICAGO, YL 60675-3155 INQUIRIES: (630) 261-8714

PLEASE DETACH AND RETURN WITH RELETTANCE

TAX EXEMPT LD.:

SALES REF: CRAIG REYNOLDS (815-895-6501) PLANT: MCCOOK

SALES REP	: CRAIG REY	ONOILDS (81	.5-895-6501	)	PLAN	T: MCCOOK			
INVOICE NO.	INVOICE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP.	PURCHASE OR	DER NUMBER	LADING	FREIGHT
445237	01/18/05	376	0088389	786560	007			ł	DELIVERED
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MINOWEST DIVISION, VALCAN CONSTRUCTION MATERIALS, LP 747 E 22m3 STREET, SUITE 200 - LOMBARD, IL 60148 0149 - TELEPHONE (530) 281-8600

5HIP TO:

345 P ORKO ST CHICAGO 345 E OHIO ST

SOLD TO:

TERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 01/25/05

INVOICE NO:

446919

INVOICE AMT:

PAYMENT DUE: 02/24/05

To ensure proper credit, please provide a remittance advice. In the absence of remittance advice, payments will be applied to the oldest involce first. Please return top portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LF 75 REMITTANCE DRIVE

SUITE 3155

CHICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

TAX EXEMPT I.D.:

PLEASE DETACH AND RETURN WITH REMITTANCE

SALES REP	CRAIG REYN	10LDS (81	.5-895-6501	)	PLLM	T: MCCOOK				
INVOICE NO.	HVOKE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP.	PURCHAS	ORDER NUMBE	R	LADING	FREIGHT
446919	01/25/05	378	0088389	786560	007					DETTAND
DATE SHIPPED	TICKET V	EHICLÉ NO.	PROD, CODE	DES	MORTALBEDS	LIR	IT QUANT	ΪΪΥ	PRICE	AMOUNT
01/12/05	794567 857 794569 825 794710 825 794719 825 794719 825 794815 857 794913 857 795019 825 795021 857		549	CERT CA-6		TOS	S 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2.25 2.66 2.59 2.94 2.22 2.39 2.42 2.65 2.68 5.84		
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MEDIVEST DIVISION, VUI, CAN CONSTRUCTION MATERIALS, LP 747 E 22nd STREET, SUITE 200 - LOMBARD, IL, 60148 0149 - TELEPHONE (6J0) 261-8800

SHIP TO:

E ON ORIO TO MCLURG CT EMPTY 345 E ORIO ST

SOLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 PARTLETT IL 60103-6500

SALES REP: CRAIG REYNOLDS : (815-895-6501)

CUSTOMER NO: 0088389

INVOICE DATE: 01/18/05

INVOICE NO:

44523B

INVOICE AMT:

PAYMENT DUE: 02/17/05

To ensure proper credit, please provide a remittance advice, in the obsence of remittance advice, payments will be applied to the oldest invoice first. Please return top portion of invoice with payment to:

VOLCAN CONSTRUCTION MATERIALS, LP 75 REMITTANCE DRIVE

SUITE 3155

CHICAGO, IL 60675-3155

INQUIRMES: (630)261-8714

PLEASE DETACH AND RETURN WITH REJUTTANCE

TAX EXEMPT I.D.:

PLENT: PERSHING RD RECYCLED MATERIAL

INVOICE NO. INVO	DICE DATE			SALES OADER NO	SALES REP.	PUR	CIASE ORD	ER NUMBETL	LADING	FREIGHT
445238 01	/18/05	520	0088389	78656D	007					DELIVERED
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NEUWEST DIVISION, VUI, CAN CONSTRUCTION MATERIALS, LP 747 É 22nd STRÉET, SUITE 200 - LOMBARD, IL 60148 0149 - TELEPHONE (830) 281-8600

SHIP TO:

345 E OBTO ST CRICAGO 345 E OHYO ST

SOLD TO:

THERMAL REPROTATION INC. 956 S BARTLETT RD 4 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 01/31/05

INVOICE NO: 447939

INVOICE AMT:

PAYMENT DUE: 02/28/05

To ensure proper credit, please provide a remittance advice, in the absence of remittance advice, payments will be applied to the oldest invoice first. Please return top parties of Invoice with payment to

VULCAN CONSTRUCTION MATERIALS, LP 75 REMITTANCE DRIVE

STITE 3155

CHICAGO, IL 60675-3155 INCOTRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH REMITTANCE

TAX EXEMPT I.D.:

PLANT: MCCOOK SALES REP: CRAIG REXNOLDS (015-895-6501)

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01/28/05	799549 pl	22	549	CERT CA-6	STORE	TONE	21	.97	1	
	799639 HL		1	•			21	.82		
	799693 H1	22	l I			1	21	.23		
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MIDWEST CHASION, VIR.CAN CONSTRUCTION MATERIALS, LP 747 E 22rd STREET, SUITE 200 • LOMBARD, IL 82/148 0149 • TELEPHONE (630) 251-8600

SHIP TO:

345 E ORIO ST CRICAGO 345 g OHIO ST

SOLO TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD # 250 BARTLETT IL 60103-6500

CUSTOMER NO: 0088389

INVOICE DATE: 02/08/05

INVOICE NO:

450379

INVOICE AMT:

PAYMENT DUE: 03/10/05

To ensure proper credit, please provide a remittance advice, in the absence of remittance advice, payments will be applied to the oldest throice first. Please return top portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LP

75 REMITTARCE DRIVE

SUITE 3155

CRICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH REMITTANCE TAX EXEMPT LD.:

VOICE NO.	DAVOICE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP.	PURC	HASE ORD	EK NUMBER	LADINO	FREIGHT
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MIDWEST DIVISION, VILICAN CONSTRUCTION MATERIALS, LP 747 E 22rd STREET, SUITE 200 • LOMBARD, IL 60148 0140 • TELEPHONE (630) 261-8600

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345 B ORIO ST 345 B ORIO ST

SOLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT ND # 250 BARTLETT IL 60103-6500 CUSTOMER NO:

0088389

INVOICE DATE: , 02/08/05

02/08/05 450380

INVOICE NO:

INVOICE AMT:

PAYMENT DUE: 03/10/05

To ensure proper credit, please provide a remittence solvice, in the absence of remittence advice, payments will be applied to the oldest invoice first. Please return top portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LP 75 REMITTANCE DRIVE

SUITE 3155

CRICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

PLEASE DETACH AND RETURN WITH REMITTANCE

TAX EXEMPT I.D.:

INVOICE NO.	INVOICE DATE	PLANT NO.	CUSTOMER NO	SALES ORDER NO	SALES REP	PUR	URO BEAHOS	ER NUMBER	LADING	FREIGHT
450360	02/08/05	520	0088389	786560	007					DELIVERE
ATE SHIPPED	TIÇKET	VEHICLE NO.	PROD. CODE	DE	SCRIPTION		UNIT	QUANTITY	PRICE	AMOUNT
02/03/05	771981 VA 772025 VA	N42	549 6.250¥	CA-6 (R) CIL STATE-I 016 CNTYI LOCAL-I	AP/TEF AX = AX =	20.65 4.96 3.30	TOMES	20.65 20.75 20.75 41.40*		
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MIDWEST DIVESON, VUICAN CORSTRUCTION MATERIALS, LP 747 E 22nd STREET, SUITE 200 - LOMBARD, IL 60148 0149 - TELEPHONE (830) 261-8600

SHIP TO:

345 B ORIO ST CHICAGO 345 E GAIO ST

SOLD TO:

THERMAL REMEDIATION INC. 956 S BARTLETT RD | 250 BARTLETT IL 60103-6500

CUSTOMER NO:

0088389

INVOICE DATE: 02/15/05

INVOICE NO:

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INVOICE AMT:

PAYMENT DUE: 03/17/05

To ensure proper credit, please provide a remittance solvice. In the absence of remittance advice, payments will be applied to the cidest invoice first. Please rotum (op portion of invoice with payment to:

VULCAN CONSTRUCTION MATERIALS, LP 75 REMETTANCE DRIVE SUITE 3155

CHICAGO, IL 60675-3155 INQUIRIES: (630)261-8714

TAX EXEMPT I.D.:

PLEASE DETACH AND RETURN WITH REJUTTANCE

PLANT: MCCOOK 981RS REP: CRATG REVNOLDS (815-895-6501)

DATES REP:	NVOICE DATE		5-895-6501 CUSTOMER NO	SALES ORDER NO.	SALES REP.	PUR	CHASE OR	DER NUMBER		LADING	FREIGHT
451999	02/15/05	378	0088389	786560	007	_					DELIVERED
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02/08/05	803094 NA	R <b>64</b>	549	CERT CA-6	STORE		7083	21. 21.			
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From: Jan 61, 2005 To: Feb 24, 2005 Specified Contract: 003010

Facility: All Facilities			SUMMA	SUMMARY REPORT	Ticket Typ	Ticket Type: All Ticket Types	
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